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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

In The Matter Of:	)	
	)	
Woodstock Municipal Landfill	)	
	)	
City of Woodstock, Illinois AlliedSignal Corporation,	)	
	)	U.S. EPA Docket No.
Respondents.	)	
	)	
U.S. EPA ID # ILD980605943	)	
	)	
Proceeding Under Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. § 9606(a))	)	

ADMINISTRATIVE ORDER
FOR REMEDIAL DESIGN AND REMEDIAL ACTION

I. INTRODUCTION AND JURISDICTION

1. This Order directs Respondents to perform a remedial design for the remedy described in the Record of Decision for the Woodstock Municipal Landfill Superfund Site, dated June 30, 1993, and to implement the remedial design by performing a remedial action. This Order further directs the Respondents to monitor and maintain the remedial action so implemented. This Order is issued to Respondents by the United States Environmental Protection Agency ("U.S. EPA") under the authority vested in the President of the United States by § 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980,

42 U.S.C. § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (1986) ("CERCLA"), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of U.S. EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg. 2926), and was further delegated to the Regional Administrator on September 13, 1987 by U.S. EPA Delegation No. 14-14 and 14-14A, and to the Director, Waste Management Division, Region V, by Delegation 14-14B.

II. PARTIES BOUND

2. This Order shall apply to and be binding upon each Respondent identified in Paragraph 7, its successors and assigns. Each Respondent is jointly and severally responsible for carrying out all activities required by this Order. Failure of one or more Respondents to comply with all or any part of this Order shall not in any way excuse or justify noncompliance by any other Respondent. No change in the ownership, corporate status, or other control of any Respondent shall alter the responsibilities of such Respondent or any other Respondent under this Order.

3. Each Respondent shall provide a copy of this Order to any prospective owners or successors before a controlling interest in such Respondent's assets, property rights, or stock are transferred to the prospective owner or successor. Respondents shall provide a copy of this Order to each contractor, subcontractor, laboratory, or consultant retained to perform any Work under this Order, within five days after the effective date of this Order or on the date such services are retained,

whichever is later. Respondents shall also provide a copy of this Order to any person acting on behalf of Respondents with respect to the Site or the Work and shall ensure that all contracts and subcontracts entered into hereunder require performance under the contract to be in conformity with the terms of and Work required by this Order. With regard to the activities undertaken pursuant to this Order, each contractor and subcontractor shall be deemed to be related by contract to the Respondents within the meaning of § 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, each Respondent is responsible for compliance with this Order and for ensuring that its contractors, subcontractors and agents perform all Work in accordance with this Order.

4. Not later than thirty (30) days prior to any transfer of any interest in any real property included within the Site, Respondents shall submit a true and correct copy of the transfer documents to U.S. EPA, and shall identify the transferee(s) by name, principal business address and effective date of the transfer.

III. DEFINITIONS

5. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning ascribed to them in the statute or its implementing regulations. Whenever terms listed below are used in this Order or in the documents attached

to this Order or incorporated by reference into this Order, the following definitions shall apply:

a. "Day" shall mean a calendar day unless expressly stated to be a working day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the end of the next working day.

b. "IEPA" shall mean the Illinois Environmental Protection Agency.

c. "National Contingency Plan" or "NCP" shall mean the National Contingency Plan promulgated pursuant to § 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

d. "Paragraph" shall mean a portion of this Order identified by an Arabic numeral.

e. "Performance Standards" shall mean those cleanup standards, standards of control, and other substantive requirements, criteria or limitations, identified in the Record of Decision and Scope of Work, that the remedial action and Work required by this Order must attain and maintain.

f. "Record of Decision" or "ROD" shall mean the U.S. EPA Record of Decision relating to the Site, executed on June 30, 1993, by the Regional Administrator, U.S. EPA, Region V, and all attachments thereto, which is attached hereto and made a part hereof as Attachment 1.

g. "Response Costs" shall mean all costs, including direct costs, indirect costs, and interest incurred by the United States to perform or support response actions at the Site, including, but not limited to, contract and enforcement costs.

h. "RPM" shall mean the U.S. EPA Remedial Project Manager for the Site.

i. "Section" shall mean a portion of this Order identified by a Roman numeral and includes one or more Paragraphs.

j. "Section 106 Administrative Record" shall mean the Site Administrative Record and all documents considered or relied upon by U.S. EPA in preparation of this Order. The Section 106 Administrative Record Index is a listing of all documents included in the Section 106 Administrative Record, and is attached hereto as Appendix 1.

k. "Site" shall mean the Woodstock Municipal Landfill Superfund site, which comprises approximately 40 acres and is located south of Davis Road, southwest of the intersection of U.S. Route 14 and Illinois Route 47, as described in the Record of Decision. The Site includes, but is not limited to, the landfill property owned by the City of Woodstock since 1968 and all property which has been contaminated as a result of a release or releases from the landfill property and areas adjacent thereto.

l. "State" shall mean the State of Illinois.

m. "Scope of Work" or "SOW" shall mean the scope of work for implementation of the remedial design, remedial action, and

operation and maintenance at the Site, as set forth in Attachment 2 to this Order. The Scope of Work is incorporated into this Order and is an enforceable part of this Order.

n. "Work" shall mean all activities Respondents are required to perform under this Order and all attachments hereto, including, but not limited to, remedial design, remedial action and operation and maintenance.

IV. DETERMINATIONS

6. The Site is located on the south side of the City of Woodstock, Illinois, a municipality with a population of approximately 14,350 residents. The land surrounding the Site is used for residential, agricultural, commercial and industrial purposes. The City of Woodstock wastewater treatment plant is located south of the Site. The land immediately adjacent to the site includes wetlands and the Kishwaukee River headwaters.

The Site was first used as a trash dump and open burning area in 1935. The total volume of refuse currently in the landfill is estimated to be 13,000,000 cubic feet. The total volume of leachate in the landfill is estimated to be approximately 1.4 million cubic feet (10 million gallons).

7. a. Between 1958 and 1968 the City of Woodstock operated the landfill pursuant to a lease agreement with William E. Gaulke dated August 1, 1958. Respondent City of Woodstock acquired the landfill property by warranty deed on September 6, 1968 and thereafter used the landfill for disposal of household and

municipal solid wastes and various industrial wastes, including waste paints and coating materials, plating wastes, solvents, waste metals, inks and drummed material, including polychlorinated biphenyl ("PCBs"). The City of Woodstock discontinued landfill disposal activities at the Site in early 1975, but used the property for landfarming of municipal sewage sludge between 1983 and 1988. Between March 1976 and October 1980, much of the landfill was covered with a fill material. Grading and filling occurred in the central and eastern portions of the landfill.

b. AlliedSignal or its former division, Woodstock Die Cast, arranged by contract, agreement or otherwise, for the disposal or treatment of hazardous substances owned or possessed by AlliedSignal or its former division, Woodstock Die Cast. Such hazardous substances were treated or disposed at the Site. As explained at more length below, hazardous substances of the same kind as those owned or possessed by AlliedSignal, or its division Woodstock Die Cast, are contained at the Site.

8. The parties identified in Paragraph 7 are collectively referred to as "Respondents."

9. During a July 1988 sampling investigation by a U.S. EPA contractor, residential wells located downgradient of the landfill property were sampled and found to contain arsenic, selenium and thallium at levels in excess of the Safe Drinking Water Act's maximum contaminant levels ("MCLs"). Based on the results of U.S. EPA and IEPA investigations and taking into

account such factors as populations at risk, the presence of hazardous substances at the Site, the potential for contamination of drinking water supplies and the potential destruction of sensitive ecosystems, U.S. EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B. The Site was listed on October 4, 1989 (54 Fed. Reg. 41015), pursuant to § 105 of CERCLA, 42 U.S.C. § 9605.

10. In September of 1989 the City of Woodstock and AlliedSignal entered into an Administrative Consent Order with U.S. EPA to perform a Remedial Investigation/Feasibility Study ("RI/FS") for the Site. From approximately June 1990 through the Spring of 1993, Respondents undertook the RI/FS for the Site under U.S. EPA's oversight and pursuant to CERCLA and the National Contingency Plan. The RI/FS was concluded in June, 1993.

11. Pursuant to § 117 of CERCLA, 42 U.S.C. § 9617, on April 7, 1993 U.S. EPA published notice of the availability of the FS for public comment. Two days later, U.S. EPA placed the proposed plan for remedial action into the Administrative Record, thereby releasing the document for public comment. U.S. EPA and IEPA presented the proposed plan to the Woodstock community at a public meeting conducted on April 28, 1993 at the Woodstock Public Library. At that time U.S. EPA took verbal comments on its proposed plan. The public comment period was originally scheduled to terminate on May 10, 1993; this period was extended to June 9, 1993 at the request of the citizens of the City of Woodstock and the potentially responsible parties for the Site.

U.S. EPA participated in three public availability meetings on June 2, 1993 to address community concerns about the risks presented by the Site and to answer questions about U.S. EPA's proposed remedy. The comments and concerns of the affected community and those of the potentially responsible parties have been addressed in the responsiveness summary of the ROD.

12. The decision by U.S. EPA on the remedial action to be implemented at the Site is embodied in the Record of Decision, executed on June 30, 1993, to which the State has given its concurrence. The ROD is an enforceable part of this Order and is attached hereto as Attachment 1. The ROD is supported by an Administrative Record which contains the documents and information upon which U.S. EPA based the selection of the response action. U.S. EPA has determined that the response action selected for the Site provides adequate protection of public health, welfare and the environment; satisfies all applicable and relevant federal and State environmental laws; and is cost effective.

13. On March 30, 1994 U.S. EPA issued Special Notice letters to a number of potentially responsible parties for the Site, including Respondents, offering them the opportunity to enter into a consent decree with U.S. EPA to conduct the Remedial Design and Remedial Action ("RD/RA") for the Site. By letter dated June 3, 1994, which was supplemented on June 7, 1994, the Respondents declined to conduct the RD/RA in accordance with the ROD and SOW for the Site.

14. a. The Site presents an imminent and substantial endangerment to human health and the environment.

Vinyl chloride is present in the groundwater at a level that exceeds the MCL of 2 parts per billion ("ppb"). The average vinyl chloride concentration detected during the RI sampling was approximately 20 ppb. Bis(2-ethylhexyl)phthalate was also detected in groundwater at a concentration of 5 ppb. Inorganic contaminants were also detected in groundwater, including iron, lead, manganese, zinc, nickel at concentrations between 3 and 1750 ppb. Secondary federal drinking water standards were exceeded for iron, manganese, chloride and total dissolved solids.

Five test pits were excavated during the RI. One test pit yielded an intact drum containing PCBs (approximately 14 percent), toluene (approximately 2 percent), iron, mercury, and various volatile and semivolatile compounds.

Contaminants in leachate gas and leachate samples included volatile and semi-volatile organic compounds such as chlorobenzene, 1,2 dichloroethene, naphthalene, benzoic acid, 1,4 dichlorobenzene, benzene, ethylbenzene, toluene and xylene. Benzene is present in the leachate at a level that exceeds the MCL of 5 ppb. Inorganic compounds were also detected in the leachate generated by the landfill property, including arsenic (maximum level detected of 102 ppb/exceeds drinking water standard of 50 ppb), barium (maximum level detected of 10,800 ppb/standard of 200 ppb), chromium (maximum level detected of

1400 ppb/standard of 100 ppb), copper (maximum level detected of 10,800 ppb/standard of 1,300 ppb), lead (maximum level detected of 18,000 ppb/standard of 15 ppb), mercury (maximum level detected of 3.8 ppb/standard of 2 ppb), and nickel (maximum level detected of 15,000 ppb/standard of 100 ppb).

Sediment samples collected from the surrounding wetlands and run-off areas from the landfill contained toluene at levels between 7 and 92 µg/kg, and several semi-volatile organic compounds, including bis(2-ethylhexyl)phthalate at 1200 µg/kg. Arsenic, barium, lead, magnesium, mercury, vanadium, selenium, copper, nickel, zinc and chromium were also detected at levels between 0.15 and 29,000 mg/kg.

Soil samples collected from the landfill surface contained various inorganic compounds such as cadmium, copper, mercury, silver, and zinc as well as the semi-volatile compounds benzo(b)fluoranthene and benzo(k)fluoranthene at 690 µg/kg.

Leachate generation, if not controlled, is likely to cause further releases of hazardous substances to the groundwater, surface water, and environment and will result in further adverse environmental effects.

b. A baseline risk assessment was performed during the RI in order to assess potential risks to public health and the environment from the Site. Hazardous substances at the Site currently pose an unacceptably high risk of cancer to trespassers (e.g. children/adolescents playing on-site) through exposure to

surface soils. The exposure may occur through ingestion or dermal contact with polyaromatic hydrocarbons ("PAHs").

Health risks presented by potential future land development were also evaluated in the baseline risk assessment. If the site were developed as a park and recycling/co-composting operation, exposure to surface soils would pose an unacceptable health risk. Consumption of the leachate/groundwater would also pose both an unacceptable cancer and non-cancer risk, primarily due to ingestion of cadmium, lead, nickel, zinc, arsenic, and beryllium. An unacceptable cancer and non-cancer risk would also be posed to off-site residents consuming groundwater contaminated with vinyl chloride and arsenic emanating from the landfill.

Actual or potential health effects posed by the Site include an increased risk of cancer caused by the ingestion, inhalation, or adsorption of pollutants at the Site which are either known human carcinogens or are probable human carcinogens. Additional non-cancer health effects are also posed by the Site, which may result in central nervous system depression, tremors, impaired speech, impaired vision, impaired hearing, narcosis, dermatitis, abdominal pains, loss of consciousness, or other impairments dependent upon the chemical exposure, the exposure duration, and exposure intensity.

c. Currently, copper, mercury and zinc concentrations in the surface soils at the Site may adversely affect small terrestrial mammal populations. Aquatic species are exposed to iron at levels which exceed regulatory criteria. Furthermore,

the United States Fish & Wildlife Service has conducted a preliminary evaluation of the potential adverse effect of hazardous substances on the wetlands adjacent to the Site and has concluded:

1. The areas potentially affected by the hazardous substances at the Site include upland old field habitat, palustrine emergent wetlands, and the Kishwaukee River;

2. Wildlife potentially adversely affected by the Site include the American Crow, American Kestrel, Canada Goose, Great Blue Heron, Mallard, Mourning Dove, Red-Tailed Hawk, Wood Duck, and various other migratory birds (e.g. raptors, songbirds, and waterfowl);

3. The contaminants of concern include chromium, iron, nickel, zinc, polycyclic aromatic hydrocarbons, volatile organics, and semi-volatile organics.

4. Leachate generated at the Site, which is migrating into the wetlands and surface water, presents a potential pathway for injury to the wildlife by exposing aquatic organisms to the pollutants contained in the leachate. Moreover, contaminated surface soils potentially expose the terrestrial food chain to pollutants.

15. a. The City of Woodstock operated the Site as early as 1958 and has maintained exclusive ownership and control over the Site since 1968. The City of Woodstock maintained records regarding the identity of certain waste contributors to the Site between

1973 and 1977. The City of Woodstock maintained no records concerning the nature of the wastes deposited at the Site.

b. Between 1983 and 1987 the City of Woodstock landfarmed approximately 2500 cubic yards of municipal sewage sludge at the Site. Surface soil samples collected in areas where the sludge had been deposited contained elevated levels of cadmium, copper, mercury, silver, zinc, and PAHs.

c. AlliedSignal or its former division Woodstock Die Cast contributed over 6000 cubic yards of nickel plating waste to the Site between 1971 and 1975. AlliedSignal's plating waste contained nickel, copper, zinc and chromium. Nickel, copper, zinc and chromium are hazardous substances located at the Site. Chromium, copper, and nickel have been detected in leachate emanating from the landfill at levels which exceed federal drinking water standards.

16. Under current Site conditions, exposure to hazardous substances may pose an unacceptable cancer risk to trespassers through exposure to PAHs, which are present in the contaminated surface soil. Debris piles also present a risk of physical danger.

Future development of the landfill itself may present additional unacceptable health risks unless current conditions are remedied. The baseline risk assessment performed during the RI determined that, if the Site is developed, unacceptable non-cancer risks could arise as a result of consumption of leachate/groundwater as drinking water. Development near or

downgradient from the Site would also pose unacceptable cancer and non-cancer risks due to exposure to contaminated groundwater emanating from the Site.

17. The remedy selected by U.S. EPA for the Site addresses all contaminated media. The remedy includes: (1) excavation and consolidation of contaminated sediments and sludges under a landfill cap; (2) installation and maintenance of a geosynthetic landfill cap consisting of a bentonite layer, a geosynthetic membrane, a drainage layer, a rooting zone layer, and topsoil, and which complies with Illinois Administrative Code (IAC) Title 35, Subtitle G, Chapter 1, Subchapter i: Solid Waste and Special Waste Hauling, Part 811.314; (3) installation and maintenance of a landfill gas venting system that is compatible with the geosynthetic cap; (4) installation and operation of a groundwater extraction, treatment and discharge system; (5) development and implementation of a comprehensive monitoring program to ensure the effectiveness of the remedy; (6) characterization of wetlands and restoration of wetland areas where contaminated sediment removal occurs or where damage or loss of wetlands occurs during or after construction of the landfill cap; (7) development and implementation of a surface water and sedimentation control system; and (8) implementation of institutional controls to limit land and groundwater use. See Record of Decision dated 6/30/93, and Appendix II thereof (Responsiveness Summary).

18. The geosynthetic cap selected as the primary component of the remedy for the Site will permanently reduce infiltration of

water into the landfill, thereby reducing the amount of leachate generated and minimizing additional adverse impacts to the environment to the maximum extent practicable. The geosynthetic cap will not adversely affect the extent or condition of surrounding wetlands. The cap will ensure significant reduction of leachate generation. The cap will reduce the potential for direct contact by trespassers to hazardous substances.

The groundwater extraction and treatment component of the remedy will remediate vinyl chloride groundwater contamination located downgradient of the landfill and eliminate the risk posed by this contaminant.

The landfill gas venting component of the remedy is necessary to prevent: (1) the potential increase in lateral migration of landfill gas that may occur with installation of a landfill cap; and (2) potential damage to the cap that may occur if landfill gas were allowed to accumulate.

The monitoring component of the remedy will ensure that all aspects of the remedy operate in accordance with their intended function and design.

The wetland mitigation component of the remedy will ensure that no further degradation or loss of wetlands will occur. Sediments which U.S. EPA, in consultation with IEPA, determines to be contaminated as a result of releases from the landfill will be removed and will be placed under the landfill cap. Wetlands will be restored to their natural condition.

Finally, institutional controls will ensure the integrity of the remedy and will protect human health and the environment.

19. The Site is a "facility," as that term is defined in § 101(9) of CERCLA, 42 U.S.C. § 9601(9).

20. Each Respondent is a "person," as that term is defined in § 101(21) of CERCLA, 42 U.S.C. § 9601(21).

21. Each Respondent is a liable party as defined in § 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is subject to this Order under § 106(a) of CERCLA, 42 U.S.C. § 9606(a).

22. "Hazardous substances," as defined in § 101(14) of CERCLA, 42 U.S.C. § 9601(14), are present at the Site.

23. These hazardous substances have been and threaten to continue to be "released," as that term is defined in § 101(22) of CERCLA, 42 U.S.C. § 9601(22), from the Site.

24. The past disposal of hazardous substances at and from the Site constitutes a "release." The potential for future migration of hazardous substances from the Site poses a threat of a "release," as that term is defined in § 101(22) of CERCLA, 42 U.S.C. § 9601(22).

25. The release and threat of release of one or more hazardous substances from the Site is or may be presenting an imminent and substantial endangerment to the public health or welfare or the environment.

26. The actions required by this Order are necessary to protect the public health, welfare, or the environment and are consistent with the National Contingency Plan, as amended, and CERCLA.

V. NOTICE TO THE STATE

27. U.S. EPA has notified the State that U.S. EPA intends to issue this Order. U.S. EPA will consult with the State and the State will have the opportunity to review and comment to U.S. EPA regarding all Work to be performed, including remedial design, reports, technical data and other deliverables, and any other issues which arise while the Order remains in effect.

VI. ORDER

28. Based on the foregoing, each Respondent is hereby ordered to comply with all of the provisions of this Order, including but not limited to all attachments to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines contained in this Order, attachments to this Order, or incorporated by reference into this Order.

VII. WORK TO BE PERFORMED

29. Within five (5) days after the effective date of this Order, each Respondent owning real property which comprises any part of the Site shall record notice of and/or a copy of this Order in the appropriate governmental office where land ownership and transfer records are filed or recorded, and shall ensure that the recording of said notice and/or Order is indexed to the title of each and every parcel of property owned by said Respondent at the Site, so as to provide notice to third parties of the issuance and terms of this Order with respect to those properties.

Respondents shall, within 15 days after the effective date of this Order, send notice of such recording and indexing to U.S. EPA.

30. All workplans, reports, engineering design documents, and other deliverables ("workplans and deliverables"), as described throughout this Order and attachments hereto, shall be submitted to IEPA (except documents claimed to contain confidential business information) and U.S. EPA. All workplans and deliverables will be reviewed and either approved, approved with modifications, or disapproved by U.S. EPA, in consultation with IEPA. In the event of approval or approval with modifications by U.S. EPA, Respondents shall proceed to take any action required by the workplan, report or other item, as approved or modified by U.S. EPA. If the workplan or other deliverable is approved with modifications or disapproved, U.S. EPA will provide, in writing, comments or modifications required for approval. Respondents shall amend the workplan or other deliverable to incorporate only those comments or modifications required by U.S. EPA. Respondents shall comply with the schedule contained in the SOW for submittal or resubmittal of an amended workplan or other deliverable. U.S. EPA shall review the amended workplan or deliverable and either approve or disapprove it. Failure to submit a workplan, amended workplan or other deliverable shall constitute noncompliance with this Order. Submission of an amended workplan or other deliverable which fails to incorporate all of U.S. EPA's required modifications, or which includes other

unrequested modifications, shall also constitute noncompliance with this Order. Approval by U.S. EPA of the workplan, amended workplan or other deliverable shall cause said approved workplan, amended workplan or other deliverable to be incorporated herein as an enforceable part of this Order. If any workplan, amended workplan or other deliverable is not approved by U.S. EPA, Respondents shall be deemed to be in violation of this Order.

31. In the event of an inconsistency between this Order and any subsequent approved workplan, amended workplan or other deliverable, the terms of this Order shall control.

32. Within forty five (45) days after the authorization to proceed is given by the U.S. EPA, Respondents shall submit Draft Predesign Work Plans to IEPA for review and to U.S. EPA for review and approval. Within forty five (45) days after U.S. EPA approval of the Final Predesign Report, Respondents shall submit a Draft RD/RA Work Plan. The RD/RA Workplan shall include a detailed step-by-step plan for completing the remedial design and construction for the remedy selected in the ROD, and for attaining and maintaining all requirements and Performance Standards identified in the ROD and SOW. The RD/RA Workplan shall describe in detail the tasks and deliverables Respondents will complete during the conductance of the Work, and a schedule for completing the tasks and deliverables. The RD/RA Workplan shall be consistent with, and provide for implementation of, the SOW, and shall comport with U.S. EPA's "Superfund Remedial Design and Remedial Action Guidance, OSWER Directive 9355.0-4A."

33. Upon approval of the RD/RA or Amended RD/RA Workplan by U.S. EPA, Respondents shall implement the approved RD/RA or Amended RD/RA Workplan and submit all design deliverables according to the schedule in the approved RD/RA or Amended RD/RA Workplan. Any noncompliance with the approved RD/RA or Amended RD/RA Workplan shall be a violation of this Order.

34. Within thirty (30) days of approval by U.S. EPA of all design documents, Respondents shall implement the remedial action in accordance with any and all instructions from the RPM and in accordance with the schedules in the RD/RA or Amended RD/RA Workplan. Unless otherwise directed by U.S. EPA, Respondents shall not commence remedial action at the Site prior to approval of all design documents.

35. Within thirty (30) days of approval by U.S. EPA of the RD/RA or Amended RD/RA Workplan, Respondents shall take actions necessary to institute land use restrictions at the Site that will ensure that the physical and structural integrity of the cap and its components are not compromised. Respondents shall secure deed restrictions and place institutional controls on groundwater and/or land usage, as approved by U.S. EPA, to ensure the integrity of all aspects of the remedy. Such institutional controls will remain in place until such time that performance standards are achieved and U.S. EPA notifies Respondents, pursuant to Paragraph 82 hereof, that the remedial action is complete in full satisfaction of this Order.

36. The Work performed by Respondents pursuant to this Order shall, at a minimum, achieve the Performance Standards and the requirements of the SOW. Nothing in this Order, or in U.S. EPA's approval of any workplan, amended workplan or other deliverable, shall be deemed to constitute a warranty or representation of any kind by U.S. EPA that full performance of the remedial design or remedial action will achieve the Performance Standards set forth in the ROD and in the SOW. Respondents' compliance with such approved documents does not foreclose U.S. EPA from seeking additional Work.

37. All materials removed from the Site shall be disposed of or treated at a waste management facility approved in advance of removal by U.S. EPA's RPM and in accordance with: 1) § 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3); 2) the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. § 6901, et seq., as amended; 3) the U.S. EPA "Revised Off-Site policy," OSWER Directive 9834.11, November 13, 1987; 4) the CERCLA site discharges to POTWs Guidance Manual (EPA/540/G-90/005, 8/90), and 5) all other applicable federal, State, and local requirements. The identity of the receiving facility and state will be determined by Respondents following the award of the contract for remedial action construction. Respondents shall provide written notice to the RPM which shall include all relevant information, including the information required by Paragraph 38 below, as soon as practicable after the award of the contract and before the hazardous substances are actually shipped off-Site.

38. Prior to any off-Site shipment of hazardous substances from the Site to an out-of-state waste management facility, Respondents shall provide written notification to the appropriate state environmental official in the receiving state and to the RPM of such shipment of hazardous substances. However, the notification of shipments to the receiving state shall not apply to any off-Site shipments when the total volume of all shipments from the Site to the receiving state will not exceed ten (10) cubic yards. The notification shall be in writing, and shall include the following information, where available: (1) the name and location of the facility to which the hazardous substances are to be shipped; (2) the type and quantity of the hazardous substances to be shipped; (3) the expected schedule for the shipment of the hazardous substances; and (4) the method of transportation. Respondents shall notify the receiving state of major changes in the shipment plan, such as a decision to ship the hazardous substances to another facility within the same state, or to a waste management facility in another state.

39. Respondents shall cooperate with U.S. EPA in providing information regarding the Work to the public. When requested by U.S. EPA, Respondents shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by U.S. EPA to explain activities at or relating to the Site.

40. Within fifteen (15) days after Respondents complete remedial construction and receive final inspection approval by U.S. EPA, Respondents shall provide written notice to U.S. EPA certifying that the remedial construction activities have been completed. If, after review of the written notice, U.S. EPA determines that the remedial construction activities or any portion thereof has not been completed in accordance with this Order, U.S. EPA shall notify Respondents in writing of the activities that must be undertaken to complete the remedial construction activities and shall set forth in the notice a schedule for performance of such activities. Respondents shall perform all activities described in the notice in accordance with the specifications and schedules established therein.

If U.S. EPA concludes, following the initial or any subsequent certification of completion by Respondents pursuant to Paragraph 82 hereof, that the remedial action has been fully performed in full satisfaction of the requirements of this Order, U.S. EPA may notify Respondents that the remedial action has been fully performed. U.S. EPA's notification shall be based on present knowledge and Respondents' certification to U.S. EPA, and shall not limit U.S. EPA's right to perform periodic reviews pursuant to § 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of U.S. EPA is appropriate at the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

VIII. PERIODIC REVIEW

41. Under § 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, where hazardous substances will remain on Site at the completion of the remedial action, U.S. EPA may review the Site to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Until such time as U.S. EPA gives Respondents written notice pursuant to Paragraph 82, Respondents shall conduct the requisite studies, investigations, or other response actions determined by U.S. EPA to be necessary to permit U.S. EPA to conduct the review under § 121(c) of CERCLA. As a result of any review performed under this Paragraph, Respondents may be required to perform additional Work or to modify Work previously performed. U.S. EPA will notify Respondents in writing as to the need for such additional Work or modification of Work previously performed, and Respondents will be afforded the opportunity to comment on such additional Work or modification to previously performed Work prior to its implementation.

IX. ADDITIONAL RESPONSE ACTIONS

42. In the event that U.S. EPA determines that additional response activities or modifications to Work performed pursuant to this Order are necessary to meet Performance Standards, to maintain consistency with the final remedy, or to otherwise protect human health or the environment, U.S. EPA will notify Respondents in writing that additional response actions are necessary. Respondents will be afforded the opportunity to

comment on such additional response activities or modifications to Work performed pursuant to this Order prior to their implementation. U.S. EPA may also require Respondents to modify any plan, design, or other deliverable required by this Order, including any approved modifications.

43. Within thirty (30) days of receipt of notice from U.S. EPA that additional response activities are necessary, Respondents shall submit for approval an Additional RD/RA Workplan that complies with the requirements of Paragraph 32 herein. The Additional RD/RA Workplan shall conform to this Order's requirements for RD/RA Workplans. Upon U.S. EPA's approval of the Additional RD/RA Workplan, or Amended Additional RD/RA Workplan, the approved Additional RD/RA Workplan (or, as appropriate, the approved Amended Additional RD/RA Workplan) shall become an enforceable part of this Order, and Respondents shall implement the Additional RD/RA Workplan (or, if appropriate, the Amended Additional RD/RA Workplan) for additional response activities in accordance with the standards, specifications and schedule contained therein. Failure to submit an Additional RD/RA Workplan shall constitute noncompliance with this Order.

X. ENDANGERMENT AND EMERGENCY RESPONSE

44. In the event of any occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public

health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify U.S. EPA's RPM or alternate RPM. If neither of these persons is available, Respondents shall notify the U.S. EPA Emergency Response Unit, Region V. Respondents shall take further action in consultation with U.S. EPA's RPM and in accordance with all applicable provisions of this Order, including but not limited to the health and safety plan and the contingency plan. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and U.S. EPA takes that action instead, Respondents shall reimburse U.S. EPA for all costs of the response action not inconsistent with the NCP. Respondents shall pay the response costs in the manner described in Section XIX (reimbursement of response costs) of this Order, within thirty (30) days of U.S. EPA's demand for payment.

45. Nothing in the preceding Paragraph shall be deemed to limit any authority of the United States to take, direct or order all appropriate action to protect human health and the environment or to prevent, abate or minimize an actual or threatened release of hazardous substances on, at or from the Site.

XI. PROGRESS REPORTS

46. In addition to the other deliverables set forth in this Order, Respondents shall provide monthly progress reports to U.S. EPA and IEPA with respect to actions and activities undertaken

pursuant to this Order. The progress reports shall be submitted on or before the 10th day of each month following the effective date of this Order. Respondents' obligation to submit progress reports continues until U.S. EPA gives Respondents written notice under Paragraph 82 of this Order. At a minimum such progress reports shall contain the information specified in the SOW.

XII. QUALITY ASSURANCE, SAMPLING AND DATA ANALYSIS

47. Respondents shall use the quality assurance, quality control, and chain of custody procedures described in the "U.S. EPA NEIC Policies and Procedures Manual," May 1978, revised May 1986, U.S. EPA-330/9-78-001-R; U.S. EPA's "Guidelines and Specifications for Preparing Quality Assurance Program Documentation," June 1, 1987; U.S. EPA's "Data Quality Objective Guidance," (U.S. EPA/540/G87/003 and 004), Region V Quality Assurance Project Plan guidance, and any amendments to these documents, while conducting all sample collection and analysis activities required herein by any plan. To provide quality assurance and maintain quality control, Respondents shall:

a. Prior to the commencement of any sampling and analysis under this Order, Respondents shall submit a Quality Assurance Project Plan (QAPP) to the U.S. EPA and IEPA that is consistent with the SOW, workplans or amended workplans, U.S. EPA's "Interim Guidelines and Specifications For Preparing Quality Assurance Project Plans" (QAM-005/80), Region V QAPP guidance, and any subsequent amendments.

b. Prior to the development and submittal of a QAPP, Respondents shall attend a pre-QAPP meeting sponsored by U.S. EPA to identify all monitoring and data quality objectives. U.S. EPA, after review of the submitted QAPP, will either approve, conditionally approve, or disapprove the QAPP. Upon notification of conditional or disapproval, Respondents shall make all required modifications to the QAPP within twenty-one (21) days of receipt of such notification.

c. Use only laboratories which have a documented Quality Assurance Program that complies with U.S. EPA guidance document QAMS-005/80 and subsequent amendments.

d. Ensure that the laboratory used by the Respondents for analyses performs according to a method or methods deemed satisfactory to U.S. EPA and submits all protocols to be used for analyses to U.S. EPA at least 30 days before beginning such analyses.

e. Ensure that U.S. EPA personnel and U.S. EPA's authorized representatives are allowed access to the laboratory and personnel utilized by the Respondents for analyses.

48. Unless otherwise specified in the SOW appended hereto, Respondents shall notify U.S. EPA and IEPA not less than thirty (30) days in advance of any sample collection activity. At the request of U.S. EPA, Respondents shall allow U.S. EPA or its authorized representatives to take split or duplicate samples of any samples collected by Respondents with regard to the Site or pursuant to the implementation of this Order. In addition, U.S.

EPA shall have the right to take any additional samples that U.S. EPA deems necessary.

XIII. COMPLIANCE WITH APPLICABLE LAWS

49. All activities by Respondents pursuant to this Order shall be performed in accordance with the requirements of all federal and State laws and regulations. U.S. EPA has determined that the activities contemplated by this Order are consistent with the National Contingency Plan.

50. Except as provided in § 121(e) of CERCLA and the NCP, no permit shall be required for any portion of the Work conducted entirely on-site. Where any portion of the Work requires a federal or State permit, Respondents shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

51. This Order is not and shall not be construed to be, a permit issued pursuant to any federal or State statute or regulation.

XIV. REMEDIAL PROJECT MANAGER

52. All communications, whether written or oral, from Respondents to U.S. EPA shall be directed to U.S. EPA's RPM. Respondents shall submit to U.S. EPA ten (10) copies of all documents, including plans, reports, and other correspondence, which are developed pursuant to this Order, and shall send these documents by certified mail, return receipt requested, or as otherwise directed orally by the RPM.

U.S. EPA's RPM is:

William J. Bolen
Remedial Project Manager
U.S. Environmental Protection Agency
77 West Jackson Blvd.
HSRL-6J
Chicago, IL 60604-3590
(312) 353-6316

U.S. EPA's Alternate Remedial Project Manager is:

Kerry J. Street
U.S. EPA HSRL-6J
77 West Jackson Blvd.
Chicago, IL 60604-3590
(312) 886-7240

Respondents shall submit to IEPA three (3) copies of all documents, including plans, reports, and other correspondence, which are developed pursuant to this Order, and shall send these documents via First Class mail, or as otherwise orally directed by the RPM, to:

Charlene Falco
Project Manager
Illinois Environmental Protection Agency
2200 Churchill Rd.
P.O. Box 19276
Springfield, Illinois 62794-9276

53. U.S. EPA may change its RPM or Alternate Remedial Project Manager. If U.S. EPA changes its RPM or Alternate Remedial Project Manager, U.S. EPA will inform Respondents in writing of the name, address, and telephone number of the new RPM or Alternate Remedial Project Manager.

54. U.S. EPA's RPM and Alternate Remedial Project Manager shall have the authority lawfully vested in a Remedial Project Manager and On-Scene Coordinator by the National Contingency Plan. U.S.

EPA's RPM or Alternate Remedial Project Manager shall have authority, consistent with the NCP, to halt any Work required by this Order, and to take any necessary response action.

XV. PROJECT COORDINATOR AND CONTRACTORS

55. All aspects of the Work to be performed by Respondents pursuant to this Order shall be under the direction and supervision of a Project Coordinator qualified to undertake and complete the requirements of this Order. The Project Coordinator shall be the RPM's primary point of contact with the Respondents and shall possess sufficient technical expertise regarding all aspects of the Work. Within fifteen (15) days after the effective date of this Order, Respondents shall notify U.S. EPA in writing of the name and qualifications of the Project Coordinator, including primary support entities and staff, proposed to be used in carrying out Work under this Order. U.S. EPA reserves the right to disapprove the proposed Project Coordinator.

56. Within thirty (30) days after U.S. EPA approves the RD/RA Workplan, Respondents shall identify a proposed construction contractor and notify U.S. EPA in writing of the name, title, and qualifications of the construction contractor proposed to be used in carrying out Work under this Order.

57. Respondents shall submit a copy of the construction contractor solicitation documents to U.S. EPA not later than five (5) days after publishing the solicitation documents. Upon U.S.

EPA's request, Respondents shall submit complete copies of all bid packages received from all contract bidders.

58. At least seven (7) days prior to commencing any Work at the Site pursuant to this Order, Respondents shall submit to U.S. EPA a certification that Respondents or their contractors and subcontractors have adequate insurance coverage or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondents pursuant to this Order. Respondents shall ensure that such insurance or indemnification is maintained for the duration of the Work required by this Order.

59. U.S. EPA retains the right to disapprove of the Project Coordinator and any contractor, including but not limited to remedial design contractors and construction contractors retained by the Respondents. In the event U.S. EPA disapproves a Project Coordinator or contractor, Respondents shall retain a new project coordinator or contractor to perform the Work, and such selection shall be made within fifteen (15) days following the date of U.S. EPA's disapproval. If at any time Respondents propose to use a new project coordinator or contractor, Respondents shall notify U.S. EPA of the identity of the new project coordinator or contractor at least fifteen (15) days before the new project coordinator or contractor performs any Work under this Order.

XVI. SITE ACCESS AND DOCUMENT AVAILABILITY

60. In the event that the off-Site area that is to be used for access, property where documents required to be prepared or maintained by this Order are located, or other property subject to or affected by this response action, is owned in whole or in part by parties other than those bound by this Order, Respondents will obtain, or use their best efforts to obtain, site access agreements from the present owner(s), within sixty (60) days of the effective date of this Order. Said agreements shall provide access for U.S. EPA, its contractors and oversight officials, the State and its contractors, and Respondents or Respondents' authorized representatives and contractors. Said agreements shall specify that Respondents are not U.S. EPA's representative with respect to liability associated with Site activities. Copies of such agreements shall be provided to U.S. EPA prior to Respondents' initiation of field activities. Respondents' best efforts shall include providing reasonable compensation to any off-Site property owner. If access agreements are not obtained within the time referenced above, Respondents shall immediately notify U.S. EPA of their failure to obtain access.

61. If Respondents cannot obtain the necessary access agreements, U.S. EPA may exercise non-reviewable discretion and: (1) use its legal authorities to obtain access for the Respondents; (2) conduct response actions at the property in question; or (3) terminate this Order. If U.S. EPA conducts a response action and does not terminate the Order, Respondents

shall perform all other activities not requiring access to that property. Respondents shall integrate the results of any such tasks undertaken by U.S. EPA into its reports and deliverables. Respondents shall reimburse U.S. EPA, pursuant to Section XIX (reimbursement of response costs) of this Order, for all response costs (including attorney fees) incurred by the United States to obtain access for Respondents.

62. Respondents shall allow U.S. EPA and its authorized representatives and contractors to enter and freely move about all property at the Site and off-Site areas subject to or affected by the Work under this Order or where documents required to be prepared or maintained by this Order are located, for the purposes of inspecting conditions, activities, the results of activities, records, operating logs, and contracts related to the Site or Respondents and their representatives or contractors pursuant to this Order; reviewing the progress of the Respondents in carrying out the terms of this Order; conducting tests as U.S. EPA or its authorized representatives or contractors deem necessary; using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to U.S. EPA by Respondents. Respondents shall allow U.S. EPA and its authorized representatives to enter the Site, to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to Work undertaken in carrying out this Order. Nothing herein shall limit U.S. EPA's right of entry or inspection authority under federal law, and

U.S. EPA retains all of its information gathering and enforcement authorities and rights under CERCLA, RCRA, and any other applicable statutes and regulations.

XVII. RECORD PRESERVATION

63. On or before the effective date of this Order, Respondents shall submit a written certification to U.S. EPA that they have not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information relating to their potential liability with regard to the Site since the time of their notification of potential liability by U.S. EPA or the State. Respondents shall not dispose of any such documents without prior approval by U.S. EPA. Upon U.S. EPA's request, Respondents shall make all such documents available to U.S. EPA and shall submit a log of any such documents claimed to be privileged for any reason. This privilege log shall list, for each document, the date, author, addressees (including courtesy copies or "cc"s and "bcc"s) and subject matter of the document.

64. Respondents shall provide to U.S. EPA upon request, copies of all documents and information within their control, or within the control or possession of their contractors, subcontractors or agents relating to activities at the Site or to the implementation of this Order, including but not limited to sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, traffic routing, correspondence, or other documents or information. Respondents shall also make

available to U.S. EPA Respondents' employees, agents, or representatives for purposes of investigation, information gathering or testimony concerning the performance of the Work.

65. Until ten (10) years after U.S. EPA provides notice pursuant to Paragraph 82 of this Order, Respondents shall preserve, and shall instruct their contractors and agents to preserve, all documents, records, and information of whatever kind, nature or description relating to the performance of the Work. Upon the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) days prior to the destruction of any such records, documents or information, and, upon request of the United States, Respondents shall deliver all such documents, records and information to U.S. EPA.

66. Respondents may assert a claim of business confidentiality covering part or all of the information submitted to U.S. EPA pursuant to the terms of this Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with § 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7) or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time the claim is made. Information determined to be confidential by U.S. EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted to U.S. EPA, it may be made available to the public by U.S. EPA or the State without further notice to the Respondents. Respondents shall not assert confidentiality claims with respect to any data

or documents related to Site conditions, sampling, or monitoring.

67. Respondents shall maintain, for the period during which this Order is in effect, an index of documents that Respondents claim contain confidential business information ("CBI"). The index shall contain, for each document, the date, author, addressee, and subject of the document. Respondents shall submit an updated copy of the index to U.S. EPA with each new document or group of documents claimed to be CBI. The updated index shall also indicate any documents for which CBI claims have been withdrawn.

XVIII. DELAY IN PERFORMANCE

68. Any delay in performance of this Order according to its terms and schedules that is not properly justified by Respondents under the terms of this Section shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Order.

69. Respondents shall notify U.S. EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to U.S. EPA's RPM or Alternate RPM within forty eight (48) hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within seven (7) days after notifying U.S. EPA by telephone, Respondents shall provide written notification fully describing the nature of the delay, any

justification for delay, any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Order, the measures planned and taken to minimize the delay, and a schedule for implementing the measures that will be taken to mitigate the effect of the delay. Increased costs or expenses associated with implementation of the activities called for in this Order are not justification for any delay in performance.

XIX. REIMBURSEMENT OF RESPONSE COSTS

70. Respondents shall reimburse U.S. EPA, upon written demand, for all response costs incurred by the United States in overseeing Respondents' implementation of the requirements of this Order. U.S. EPA may submit to Respondents on a periodic basis an accounting of all oversight response costs incurred by the United States with respect to this Order. U.S. EPA's Itemized Cost Summary Reports, or such other summary as may be certified by U.S. EPA, shall serve as the accounting and basis for payment demands.

71. Respondents shall, within thirty (30) days of receipt of each U.S. EPA accounting, remit a certified or cashier's check for the amount of those costs. Interest shall accrue from the later of the date that payment of a specified amount is demanded in writing or the date of the expenditure. The interest rate is the rate established by the Department of the Treasury pursuant to 31 U.S.C. § 3717 and 4 C.F.R. § 102.13.

72. Checks shall be made payable to the "U.S. EPA Hazardous Substances Superfund" and shall include the name of the Site, the Site identification number, the account number and the title of this Order. Checks shall be forwarded to:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

Respondents shall send copies of each transmittal letter and check to the U.S. EPA's RPM.

XX. UNITED STATES NOT LIABLE

73. The United States and U.S. EPA are not to be construed as parties to, and do not assume any liability for, any contract entered into by the Respondents to carry out the activities required by this Order. The proper completion of the Work under this Order is solely the responsibility of the Respondents. The United States and U.S. EPA, by issuance of this Order, also assume no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity required by this Order.

XXI. ENFORCEMENT AND RESERVATIONS

74. U.S. EPA reserves the right to bring an action against Respondents under § 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to

this Order and not reimbursed by Respondents. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support oversight cost demand, as well as accrued interest as provided in § 107(a) of CERCLA.

75. Notwithstanding any other provision of this Order, at any time during the response action, U.S. EPA may perform its own studies, complete the response action (or any portion of the response action) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.

76. Nothing in this Order shall preclude U.S. EPA from taking any additional enforcement actions, including modification of this Order or issuance of additional Orders, and/or additional remedial or removal actions as U.S. EPA may deem necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. § 9606(a), et seq., or any other applicable law. This Order shall not affect any Respondents' liability under CERCLA § 107(a), 42 U.S.C. § 9607(a), for the costs of any such additional actions.

77. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

78. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or

equity against any person for any liability it may have arising out of or relating in any way to the Site.

79. If a court issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XXII. ACCESS TO ADMINISTRATIVE RECORD

80. The Section 106 Administrative Record is available for review on normal business days between the hours of 9:00 a.m. and 5:00 p.m. at the U.S. EPA, Region V, 77 West Jackson Boulevard Chicago, Illinois. An Index of the Section 106 Administrative Record is attached hereto as Appendix 1.

XXIII. EFFECTIVE DATE AND TERMINATION

81. This Order shall become effective thirty (30) days after the date of issuance.

82. Within thirty (30) days after Respondents conclude that all phases of the Work have been fully performed, that the Performance Standards have been attained, that all operation and maintenance activities have been completed, and that institutional controls are no longer necessary to protect the integrity of the remedial action, human health or the environment, Respondents shall submit to U.S. EPA a written

report by a registered professional engineer certifying that the Work has been completed in full satisfaction of the requirements of this Order. U.S. EPA shall require such additional activities as may be necessary to complete the Work or U.S. EPA may, based upon present knowledge and Respondents' certification to U.S. EPA, issue written notification to Respondents that the Work has been completed, as appropriate, in accordance with the procedures set forth in Paragraph 40. U.S. EPA's notification shall not limit U.S. EPA's right to perform periodic reviews pursuant to § 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of U.S. EPA is appropriate at the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607. The provisions of this Order shall be deemed to be satisfied when U.S. EPA notifies Respondents in writing that Respondents have demonstrated, to U.S. EPA's satisfaction, that all terms of the Order have been completed. This notice shall not, however, terminate Respondents' obligation to comply with Section XVII of this Order (Record Preservation).

XXIV. NOTICE OF INTENT TO COMPLY

83. On or before the effective date of this Order, each Respondent must submit to U.S. EPA a written notice stating its unequivocal intention to comply with all terms of this Order, together with the written notice required by Paragraph 63. In the event any Respondent fails to provide said written notice of its unequivocal intention to comply with this Order on or before

the effective date, said Respondent shall be deemed to have refused to comply with this Order. A Respondent which fails to provide timely notice of its intent to comply with this Order shall thereafter have no authority to perform any response action at the Site, pursuant to §§ 104(a) and 122(e)(6) of CERCLA. In the event such a Respondent subsequently changes its decision and desires to acquire authority from U.S. EPA under §§ 104(a) and 122(e)(6) of CERCLA to undertake the Work described in this Order, said Respondent must provide the notice described in this Paragraph to U.S. EPA and receive from U.S. EPA written permission and authority to proceed with Work under this Order.

XXV. PENALTIES

84. Each Respondent shall be subject to civil penalties under § 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than $25,000 for each day in which said Respondent violates, or fails or refuses to comply with this Order without sufficient cause. In addition, failure to properly provide response action under this Order, or any portion hereof, may result in liability under § 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

XXVI. OPPORTUNITY TO COMMENT AND CONFER

85. On or before the effective date of this Order, each Respondent may submit written comments to U.S. EPA. Any Respondent asserting a "sufficient cause" defense under § 106(b) of CERCLA shall describe the nature of the any "sufficient cause" defense using facts that exist on or prior to the effective date of this Order. The absence of a response by U.S. EPA shall not be deemed to be acceptance of such Respondent's assertions.

86. Within ten (10) days after the date of issuance of this Order, Respondents may request a conference with the U.S. EPA to discuss this Order. If requested, the conference shall occur within 20 (twenty) days of the date of issuance of this Order, at the office of U.S. EPA, Region V, in Chicago, Illinois.

87. The purpose and scope of the conference shall be limited to issues involving the implementation of the response actions required by this Order and the extent to which Respondents intend to comply with this Order. This conference is not an evidentiary hearing and does not constitute a proceeding to challenge this Order. It does not give Respondents a right to seek review of this Order or to seek resolution of potential liability. No record of the conference (i.e. stenographic, tape or other physical record) will be made. At any conference held pursuant to Respondents' request, Respondents may appear in person or by an attorney or other representative. Requests for a conference

must be by telephone followed by written confirmation to U.S. EPA's RPM.

So Ordered, this 2ND day of Sept, 1994.

BY: Richard C Karl for
Director, Waste Management Division
U.S. Environmental Protection Agency, Region V

Appendix 1

WOODSTOCK MUNICIPAL LANDFILL

106 Administrative Record Index

Doc #	Date	Author	Title/Description
1	-	U.S.EPA	Administrative Record for the Woodstock Municipal Landfill Record of Decision
2	1987-1989	U.S.EPA	Office of Water, Health Advisory Documents
3	1991	Warzyn	Analytical Data Reports
4	1994	Warzyn	Test Pit Log, Test Pit Samples, and Data Packages
5	1989	AlliedSignal	Response to Request for Information pursuant to Section 104(e)/CERCLA
6	1990	AlliedSignal	Response to Request for Information pursuant to Section 104(e)/CERCLA
7	1989	Jacobs	Final Report/PRP Search
8	1994	Karecki investigation	Affidavit/U.S.FWS

Attachment 1 -- Record of Decision: Woodstock Municipal Landfill Superfund Site

RECORD OF DECISION

SELECTED REMEDIAL ALTERNATIVE

DECLARATION

SITE NAME AND LOCATION

Woodstock Municipal Landfill
Woodstock, Illinois

STATEMENT OF BASIS AND PURPOSE

This decision document represents the United States Environmental Protection Agency's (U.S. EPA) selected remedial action for the Woodstock Municipal Landfill (Woodstock) site located in Woodstock, Illinois. This decision document was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, with the National Oil and Hazardous Substances Contingency Plan (NCP). This decision is based on the Administrative Record for this site.

The State of Illinois is expected to concur with the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE REMEDY

This remedy is intended to be the final action for the site. The remedy addresses all contaminated media and includes: contaminated soil, sediment, and groundwater, landfilled wastes, leachate generation and emission of landfill gases.

The major components of the selected remedy include:

- Excavation and consolidation of contaminated sediments and sludges under the landfill cap;
- Installation and maintenance of a geosynthetic landfill cap in compliance with Illinois Administrative Code (IAC) Title 35, Subtitle G, Chapter 1, Subchapter i: Solid Waste and Special Waste Hauling, Part 811.314;
- Installation and maintenance of a landfill gas venting system that is compatible with the type of cap

specified in this Record of Decision;

- Installation and operation of a groundwater extraction, treatment, and discharge system;
- Development and implementation of a comprehensive monitoring program to ensure the effectiveness of the remedy;
- Mitigation of wetland areas where contaminated sediment removal occurs;
- Mitigation of wetland damage or loss during or after remedial activities are complete;
- Development and implementation of a surface water and sedimentation control system;
- Implementation of institutional controls to limit land and groundwater use.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies which employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because this remedy may result in hazardous substances remaining on-site above health-based levels, a review will be conducted at least every five years after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Valdas V. Adamkus
Regional Administrator, Region V

6/30/93.
Date

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK, ILLINOIS

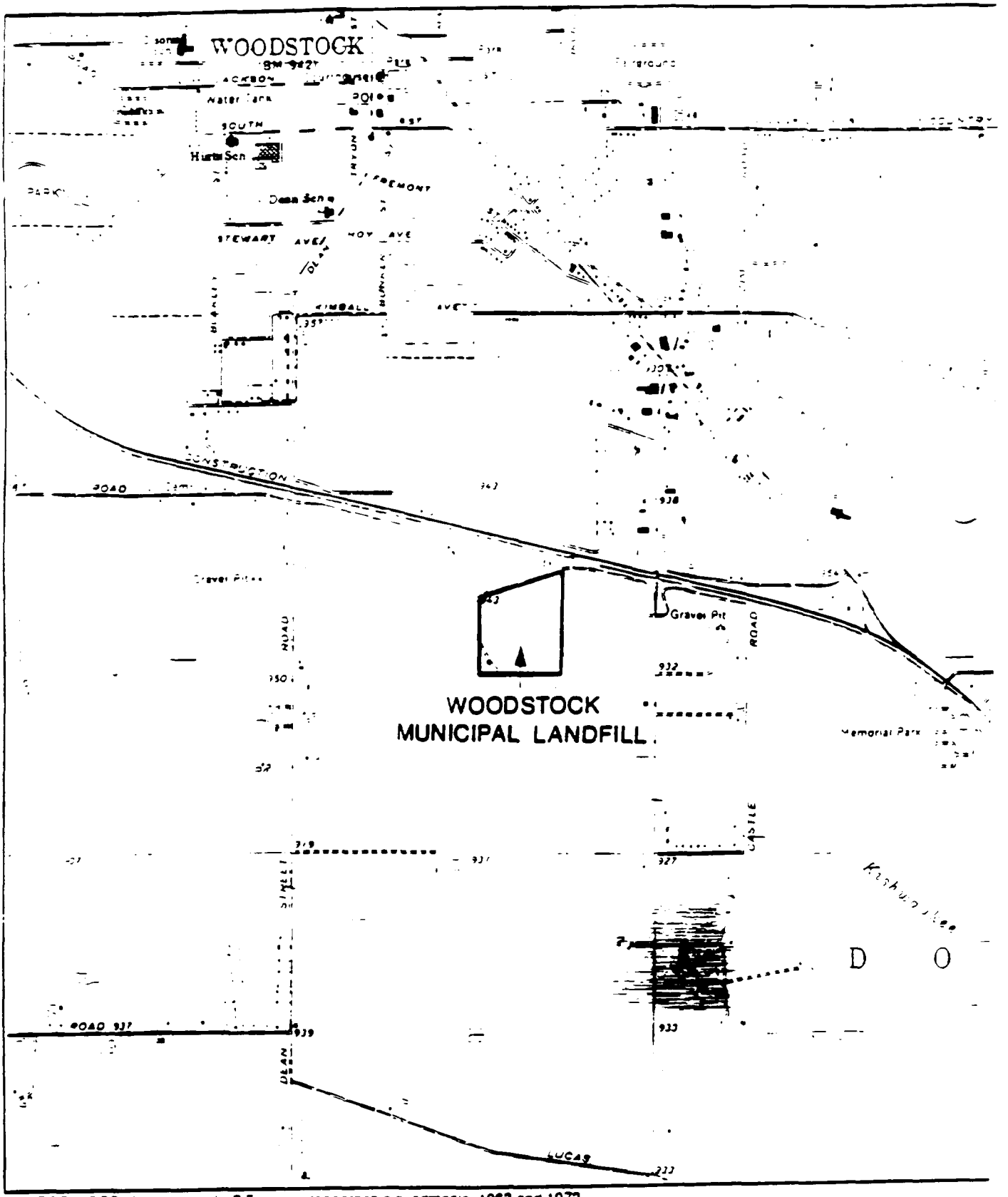
I. Site Name, Location and Description

The Woodstock Municipal Landfill site is located on the south side of the city of Woodstock, Illinois, a municipality with a population of approximately 14,350 residents. The site is located south of Davis Road, southwest of the intersection of U.S. Route 14 and Illinois Route 47 and is shown on Figure 1. The coordinates for the site are northeast quarter of Section 17, Township 44 North, Range 7 East (NE 1/4, Se 17, T44N,, R7E).

The land surrounding the Woodstock site is a mixture of residential, agricultural, wetlands, commercial, and light industrial use. Land use immediately north of the site is primarily residential and agricultural. Land use west of the site is semiagricultural with much of the land currently classified as a wetland. Wetlands are located adjacent to the site on the east. Kishwaukee River runs south along the southwestern perimeter of the site. The City of Woodstock Wastewater Treatment Plant and additional wetlands are also located south of the site.

The site geology consists of a complex sequence of unconsolidated glacial deposits which are approximately 200 feet thick. These deposits have been divided into four units; an upper sand and gravel aquifer, an intermediate clay till member, a lower clay till member, and a sand unit which overlies bedrock comprised of dolomite and shale. The glacial and bedrock aquifers underlying the site are considered to be Class I by the State of Illinois. Class I aquifers include groundwater which is either currently being used or has the potential to be used as a drinking water source. Surface water runoff is generally to the west and south and is confined by drainage to the wetlands and subsequent infiltration or overland flow into Kishwaukee River.

The nearest residents to the site are located approximately 500 feet north of the site. The nearest existing residential well which may potentially be impacted by the contaminated groundwater if further migration occurs is located approximately 2500 feet southwest of the site. Based on data collected during the remedial investigation, groundwater contamination has not migrated to the local residential wells used for drinking water. The majority of the residents in the City of Woodstock are provided water through a municipal water supply system. This system is not considered to be threatened by the site.



SOURCE. USGS. Woodstock, IL. 7.5 minute topographic quadrangle, 1963 and 1972.

FIGURE 1
SITE LOCATION MAP

WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK, IL

II. Site History and Enforcement Activities

The landfill had a number of different owners between 1935, when it was first used as a trash dump and open burning area, and when it was covered and classified as closed by the IEPA in October 1980. The current owner of the landfill property is the City of Woodstock. Other properties which are considered part of the site are under private ownership.

From approximately 1940 until leased to Woodstock in 1958, the site was used as a local trash dump and open burning area by William Gaulke. The site was used by the City under a lease agreement with Mr. Gaulke as a household garbage and municipal landfill from 1958 until its acquisition by the City in 1968. Following acquisition of the property, the property was used for the disposal of household and municipal solid waste and various industrial solid wastes including waste paint and coating materials, plating wastes, solvents, waste metals, inks and drummed material including polychlorinated biphenyls. In addition, approximately 7200 cubic yards of sludge generated by Woodstock Die Casting Inc., an Allied Signal subsidiary was also disposed of at the landfill.

The IEPA filed a complaint against the City of Woodstock in 1972 regarding operation of the landfill. The Illinois Pollution Control Board (IPCB) issued an opinion that evidence substantiated charges of open dumping, liquid deposition without approval, failure to follow set guidelines, and operating without a permit. The City of Woodstock was ordered to cease and desist all violations, obtain the necessary permits, and was fined for its actions. During this same time period, IEPA requested the installation of a leachate collection system to address releases from the landfill. However, no system was installed and a waiver was granted by the IPCB based on the City of Woodstock's stated intent to close the landfill in the near future and because the leachate did not violate surface water standards at the time. The City discontinued disposal activities at the site in 1975 and closed the landfill by covering it with fill material. Numerous inspections were conducted at the site by IEPA from 1975-1980. IEPA continually notified the city during this time that the landfill was indeed no longer accepting waste and was considered closed, but the final cover was deficient. In 1980, the IEPA classified the site as closed and covered. In 1983, the City was granted a permit from the IEPA to landfarm municipal sewage sludge at the site. A second permit was issued by the IEPA in July 1988, but sludge application was discontinued prior to that date, so the later permit has not been used.

During a July 1988 sampling investigation by the Technical Assistance Team (a USEPA contractor tasked to do site investigations), residential wells located downgradient of the landfill were sampled and found to contain arsenic, selenium, and thallium in excess of the Safe Drinking Water Act maximum drinking water levels. A subsequent sampling investigation in December 1988 again detected these substances in the same wells, but the concentrations did not exceed the regulatory criteria.

Based on the results of U.S. EPA and IEPA investigations and taking into account such factors as populations at risk, the potential of hazardous substances being present, the potential for contamination of drinking water supplies and the potential destruction of sensitive ecosystems, the site was proposed to be placed on the National Priorities List in June 1988. The site was placed on the National Priorities List in October 1989. A consent order to conduct an RI/FS was agreed to by Allied Signal and the City of Woodstock in September 1989.

III. Highlights of Community Participation

Compliance with the public participation requirements of Section 113 (k)(2)(B)(i-v) of CERCLA/SARA, have been achieved for the Woodstock site by:

- A press release was issued in June 1990 announcing a public "Remedial Investigation/Feasibility Study (RI/FS) kick-off" meeting to be held to inform the community as to U.S. EPA plans;
- The public "RI/FS kick-off" meeting was held in June 1990, announcing the initiation of the RI/FS;
- A fact sheet was developed and distributed in conjunction with the June 1990 meeting;
- A site information repository was established at the Woodstock Public Library to allow local access to site-related documents;
- A fact sheet was sent to all persons or organizations on the community relations mailing list in October 1992 updating them on the progress of the project;
- An Administrative Record has been compiled, including the RI, Baseline Risk Assessment, FS, and other documents, and has been placed in the site information repository;

- A formal advertisement announcing the commencement of the public comment period, the availability of the proposed plan, and the time and place of the public meeting was placed in the Northwest Herald on April 7, 1993. The Herald is a major local paper of general circulation;

- The Proposed Plan for remedial action was released for public comment and placed into the Administrative Record on April 9, 1993;

- A thirty (30) day comment period was established and scheduled to end on May 10, 1993;

- A public meeting was held on April 28, 1993, at the Woodstock Public Library at which U.S. EPA and IEPA presented the Proposed Plan to the community and received verbal comments. A transcript was kept of the public meeting and was made available to the public and placed in the Administrative Record and site repositories;

- A fact sheet was developed and distributed in conjunction with the April 28, 1993 meeting;

- U.S. EPA granted a thirty (30) day extension of the public comment period on April 28, 1993, extending the closing date to June 9, 1993;

- An advertisement was placed in the local newspaper on May 12 and May 13, 1993, announcing the extension of the public comment period to June 9, 1993;

- Three public availability meetings were held on June 2, 1993 at the Woodstock Public Library to address community concerns dealing with the risks posed by the site as well as to answer additional concerns with the proposed remedy:

- U.S. EPA has received oral and written comments regarding the RI/FS, Baseline Risk Assessment, and the Proposed Plan. Comments have been addressed in the attached Responsiveness Summary.

IV. Scope and Role of the Selected Remedy

This ROD addresses remediation of the contaminated surface soil, sediments, and groundwater and addresses leachate which is being generated and is discharging from the landfill. The contaminants found in these media represent

the principal threat from the Woodstock site. The generation of leachate presents a threat as a continuous contaminant source to groundwater, surface water and to the wetlands surrounding the site. In addition, a direct contact threat exists from exposure to surface soils and leachate. The primary purpose of this remedy is twofold; 1) to restore the contaminated groundwater to an acceptable level that will allow for its unrestricted use and 2) to cap the landfill, thereby minimizing the generation of leachate and eliminating the risk posed by the surface soils and sediments.

V. Summary of Site Characteristics

The remedial investigation was conducted by the PRP's contractor, Warzyn, and was initiated in July 1990. The investigation was completed in June 1992 when the Final Remedial Investigation Report was issued. The remedial investigation identified the types of contaminants that are migrating from the landfill, and assessed the potential impact of contaminant migration on human health and the environment. The assessment of the landfill was accomplished by conducting three phases of field work. The purpose of phase I was to gather information on the general nature of the site, such as the geology and hydrogeology, and to identify and quantify the nature of any potential impact at or surrounding the site. The purpose of phase II was to complete the understanding of the site characteristics. This included delineation of the extent to which contamination was released from the site and the interactions between groundwater, surface water and leachate. The assessment was completed with the phase III investigation which included test pit excavation, waste sampling, additional soil sampling and further refinement of the groundwater flow regime of the site. Figures 2 and 3 depict the locations of the various samples which were collected during these phases of work. During the course of these phases of fieldwork, data were obtained from sampling residential wells, monitoring and leachate wells, surface and subsurface soils, surface water and sediment.

The following is a brief overview of the nature and extent of the contamination found during the investigation:

Landfill Gas Characteristics

Gas samples were collected from leachate wells with the highest rate of gas flow (LW-3 and LW-4). Volatile organic compounds (VOCs) were detected and included Freon 114, chloroethane, benzene, toluene, chlorobenzene, ethylbenzene, 4-ethyl toluene, 1,3,5-trimethylbenzene, 1,2,4-

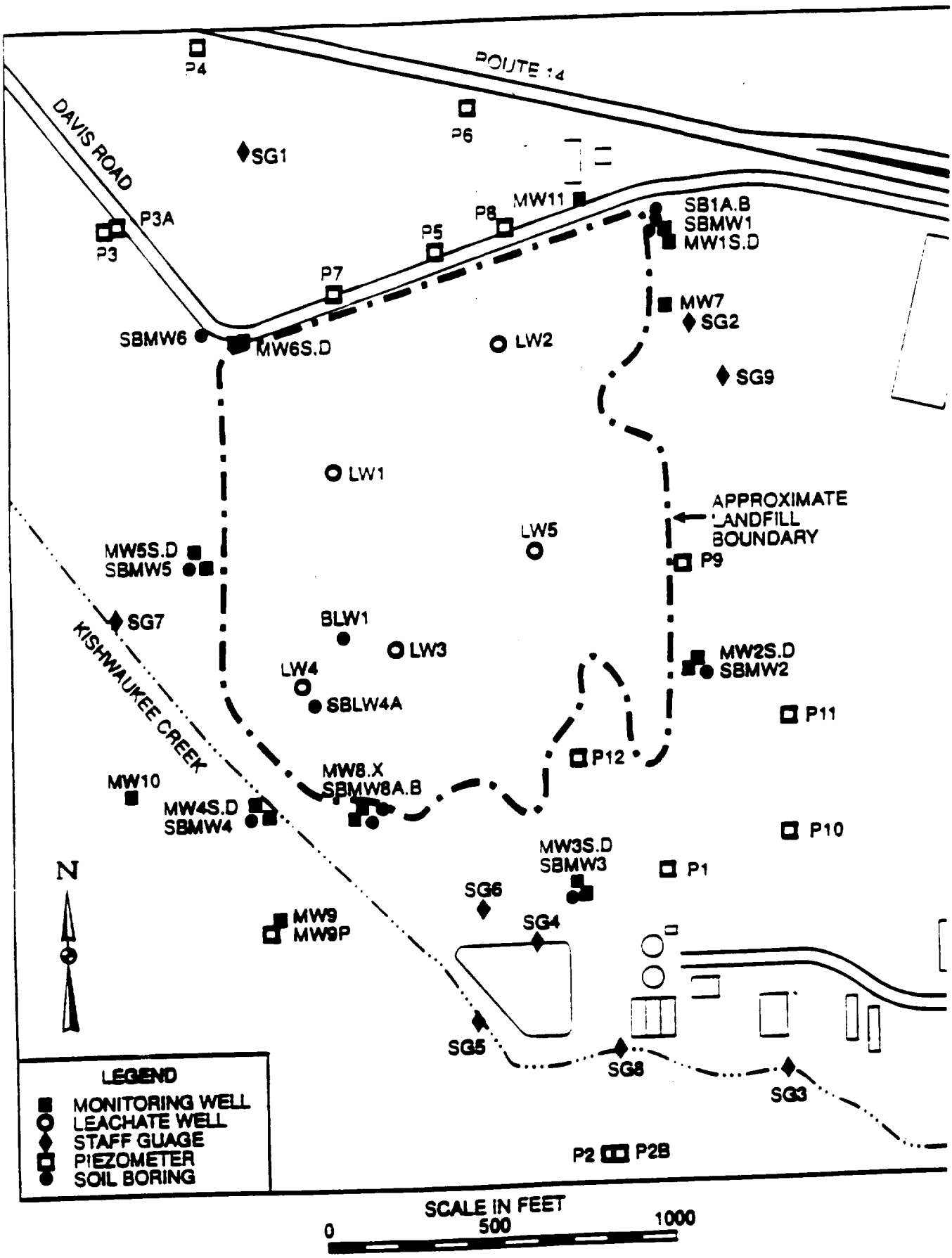


FIGURE 2
MONITORING WELL. PIEZOMETER.LEACHATE WELL.
SOIL BORING AND STAFF GUAGE LOCATION MAP

WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK. IL

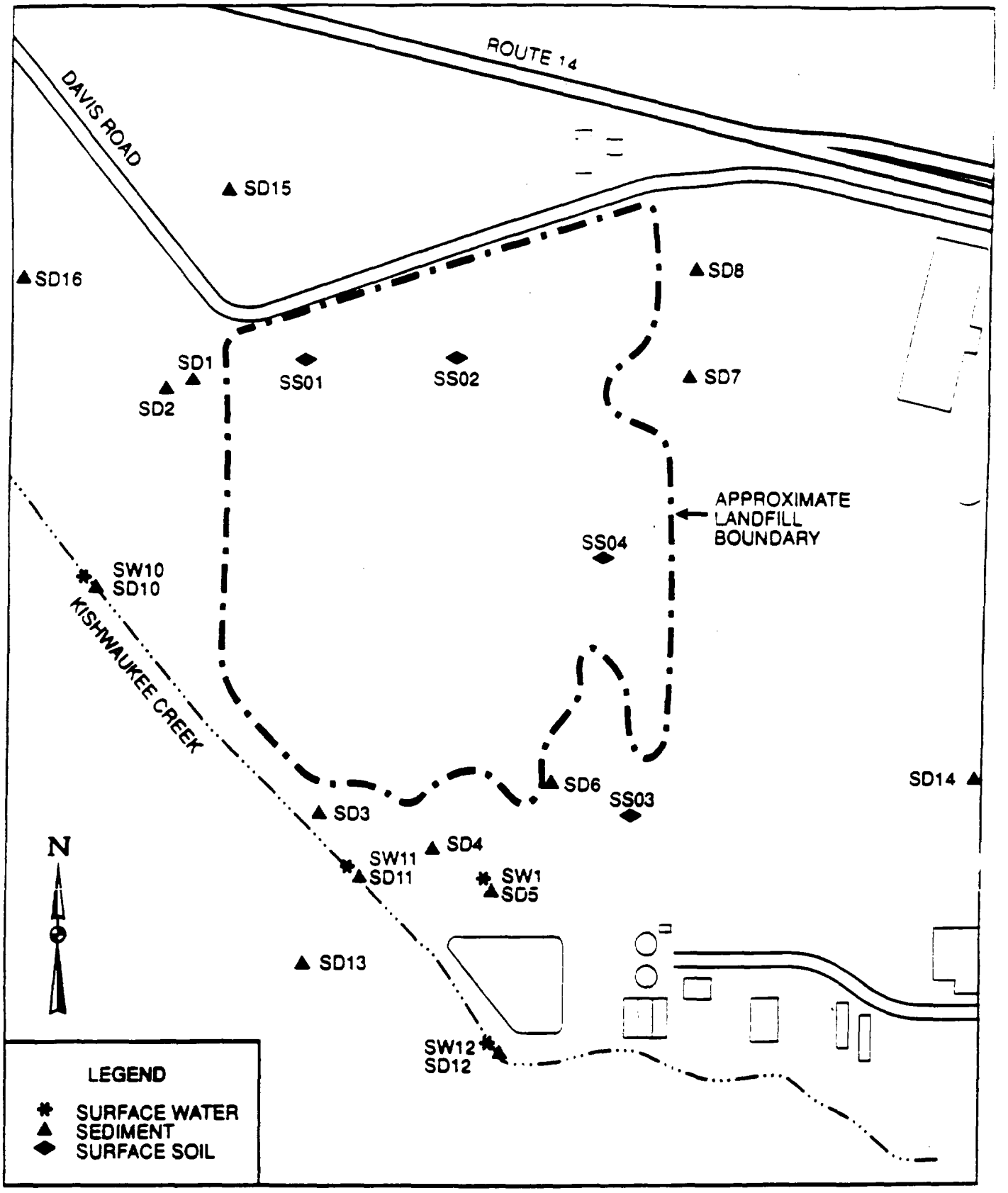


FIGURE 3
SURFACE WATER, SEDIMENT, AND
SURFACE SOIL SAMPLE LOCATION MAP

WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK, IL

trimethylbenzene, and xylene. Concentrations of these compounds ranged from 48 to 470 ppb.

Landfill Leachate Characteristics

Two rounds of leachate samples were collected from each of the five leachate wells. Analysis of these samples detected the presence of VOCs including benzene, chlorobenzene, 1,2 dichloroethene, toluene, and xylene ranging in concentration from 1 to 16 ppb. Naphthalene, a semi-volatile compound, was also detected at concentrations ranging from 6 to 34 ppb. In addition, several tentatively identified VOCs and semi-volatile organic compounds (SVOCs) were also identified and ranged in concentration from 3-48 ppb. A number of metals including arsenic, antimony, barium, beryllium, cadmium, cobalt, copper, chromium, iron, lead, magnesium, mercury, nickel, selenium, silver, vanadium, and zinc were also detected and ranged in concentration from 1 ppb to 185 ppm. Metals which were detected ~~that exceeded~~ primary drinking water standards include arsenic (ranged from 77-102 ppb with 50 ppb as the standard), barium (810-10,800 ppb, standard is 1000 ppb), chromium (86-1400 ppb, standard is 50 ppb), copper (497-3070, standard is 1300 ppb), lead (150-18,000 ppb, standard is 15 ppb), mercury (2.2-3.9 ppb, standard is 2 ppb), and nickel (1070-15,000 ppb, standard is 100 ppb). During the installation of the leachate wells, it was noted that infiltration of water was causing a mounding effect to occur, generating a large volume of leachate that subsequently discharges from the landfill.

Surface Soil Characteristics

Surface soil samples were collected and were found to be contaminated with numerous SVOCs, many of which were tentatively identified but were classified as unknown. SVOCs which were identified include phenanthrene, di-n-butylphthalate,, fluoranthene, pyrene, butylbenzlphthalate, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(b)fluoranthene, benzo(k)fluoranthene, and 4-chloroaniline. Concentrations of the known and tentatively identified SVOCs range from 43-23000 ppb. In addition, numerous inorganic compounds were also detected including arsenic, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, silver, and zinc. Concentrations of these compounds range from 0.07-34000 ppm.

Waste Characteristics

Five test pits were excavated in areas identified as possible drum disposal locations. One test pit yielded an intact drum containing polychlorinated biphenols (PCBs),

acetone, 4 methyl-2-pentanone, and toluene. In addition, several crushed drum lids and/or drum fragments were also discovered during this activity. Other test pits located crushed drums which no longer contained waste product(s).

Groundwater Characteristics

A total of 17 monitoring wells were installed at the site and each of these wells was sampled twice, with the exception of MW-11, which was installed and sampled at the end of the scheduled fieldwork. Inorganic contaminants were detected including cyanide, lead, zinc, nickel, iron, manganese, and magnesium. Concentrations of these contaminants ranged from 3-1750 ppb. VOCs were also detected including benzene, toluene, chlorobenzene, 1,2 dichloroethene, and vinyl chloride. Concentrations of VOCs ranged from 2-21 ppb. Vinyl chloride, which was detected in the upper aquifer in monitoring wells MW-4D and MW-8, exceeded the maximum contaminant level (MCL) of 2 ppb for this contaminant. The vinyl chloride plume is shown on Figure 4. In addition, secondary drinking water standards were exceeded for iron, manganese, chloride, and total dissolved solids.

Surface Water Characteristics

A total of four surface water samples were collected from locations near the landfill in Kishwaukee River. Analysis of these samples identified the presence of arsenic, barium, copper, iron, lead, manganese, nickel and zinc. Concentrations of these contaminants ranged from .4-32,200 ppb. The levels of iron detected in these sampl exceeded the ambient water quality criteria for this compound.

Sediment Characteristics

Sediment samples collected from the surrounding wetlands and Kishwaukee River contained one VOC, toluene, at concentrations ranging from 7-92 ppb. In addition, arsenic, barium, iron, lead, magnesium, manganese, mercury, vanadium, selenium, copper, nickel, zinc, and chromium were also detected ranging in concentration from 0.15-67000 ppm.

The data tables which identify the media that was sampled, the contaminant(s) identified in that media, and the respective concentrations have been attached as an appendix to this document.

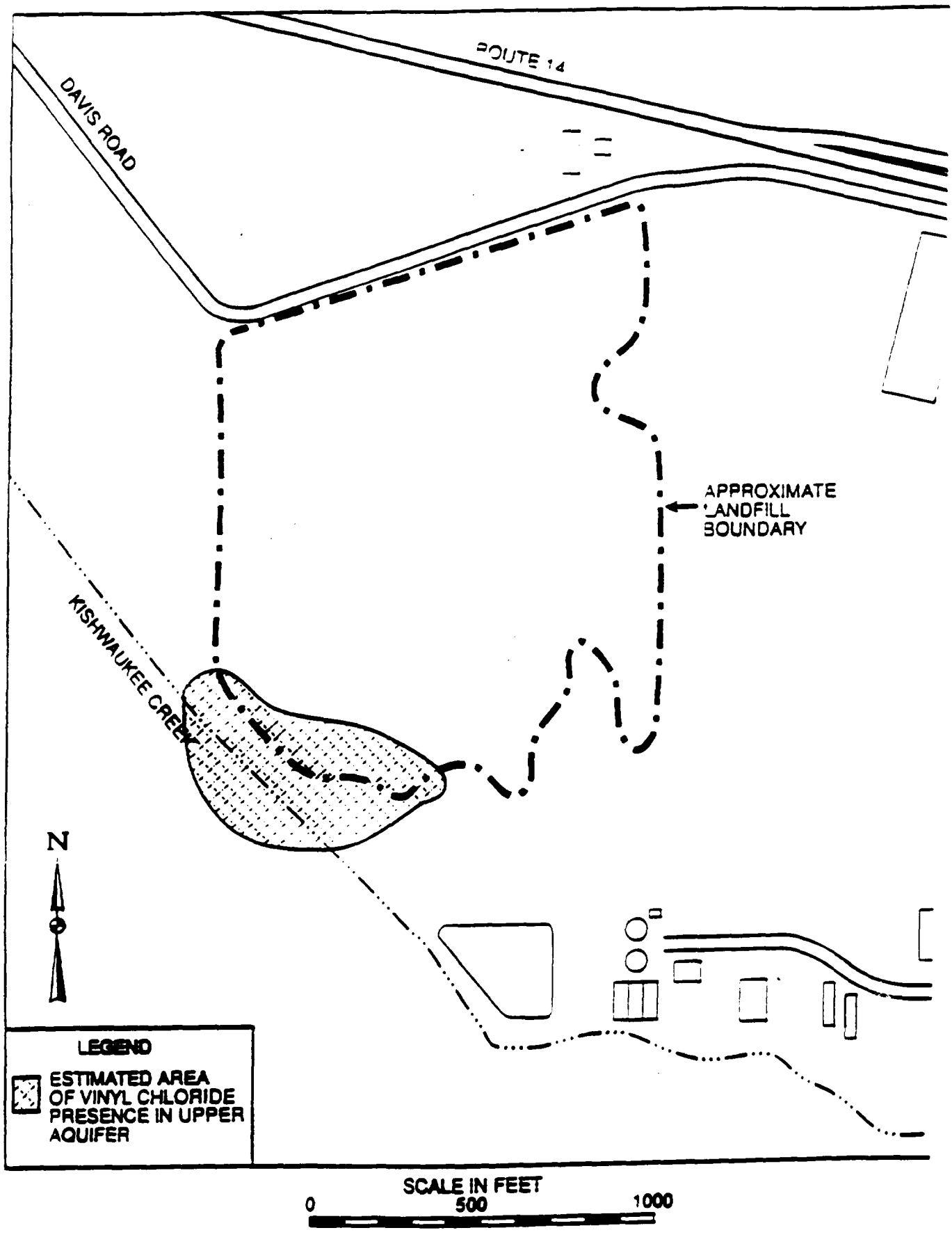


FIGURE 4
ESTIMATED AREA OF VINYL CHLORIDE
PRESENCE IN THE WATER TABLE AQUIFER
WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK, IL

The key conclusions which may be surmised from this data are as follows:

Groundwater contamination was detected in the upper aquifer immediately southwest and downgradient of the landfill. The contaminant of concern, vinyl chloride, was detected at concentrations that exceed the maximum contaminant level of 2 ppb (e.g. the maximum permissible level) for this compound.

Contamination was detected in leachate gas samples and in leachate groundwater samples collected from wells on the landfill. The contaminants included volatile organics such as benzene, ethylbenzene, toluene and xylene. In addition, inorganic contaminants such as arsenic, barium, chromium, lead and mercury were also detected in excess of regulatory criteria. Leachate is also identified as the source of contamination that is adversely affecting the groundwater, surface water and sediments at the site.

Contamination was detected in surface soils, surface water, and sediments at the site. These three media were contaminated with a wide range of VOCs, SVOCs, and inorganic compounds.

Leachate generation, if not controlled, will continue to cause further releases to the impacted media and surrounding wetlands and result in further adverse environmental impacts. While the wetlands are currently limiting the full impact of the landfill releases to the environment through attenuation, the capacity and capability of the wetlands to function in such a manner is limited.

VI. Summary of Site Risks

Risks to Human Health

A major goal of the RI was to assess potential risks to public health and the environment if the Woodstock site is not remediated. The assessment of impacts to human health is called the Baseline Risk Assessment (BLRA). Using information about what contaminants are present at the site, as well as the concentrations, quantities, locations and ability of the contaminants to migrate, a BLRA was developed to determine what, if any, risks are posed by the site and if remedial action is warranted.

Separate calculations are made for those compounds that can cause cancer and for those that can have other health

effects. For the compounds that can cause cancer (carcinogens), risks are estimated as the additional possibility of developing cancer due to exposure to the compounds. For the non-cancer causing compounds (noncarcinogens), a risk number called the hazard index (HI) is calculated so that if the risk is less than or equal to 1, no adverse health effects would be expected. If the risk is greater than 1, adverse health effects are possible.

The BLRA indicates that the site as it now exists, may pose an unacceptable cancer risk (CR) of 5×10^{-5} or CR = 5×10^{-5}) to trespassers (children/adolescents playing on-site) through exposure to surface soils. This exposure may occur through ingestion or dermal contact with polyaromatic hydrocarbons (PAHs) which are present in the contaminated surface soil. An additional physical hazard is currently posed to children by the debris piles and miscellaneous debris located on the site.

The BLRA also identified unacceptable cancer and non-cancer risks posed by the site under future land-use scenarios. As mentioned above under the current land use conditions, exposure to PAHs in the surface soil poses an unacceptable level of cancer risk to trespassers. In addition, under the potential future use scenario of the site being used as a park or recycling center, consumption of leachate from an on-site well was estimated to pose a potential non-cancer (hazard index of 10 or HI = 10) and cancer (CR = 4×10^{-4}) risk to these park users. The primary chemicals that posed a non-cancer risk due to leachate consumption were cadmium, cobalt, copper, lead, nickel and zinc. The primary chemicals that posed a cancer risk were arsenic and beryllium. Another potential health risk would also exist if a well was placed in or near the area contaminated with vinyl chloride. In this scenario, an unacceptable cancer risk (CR = 1×10^{-3}) exists if groundwater contaminated with vinyl chloride was consumed over a long exposure period by the resident(s) drinking from a contaminated well. The final scenario which was evaluated in the BLRA was use of the landfill itself for residential structures. Under this scenario, an unacceptable cancer risk (CR = 5×10^{-3}) and non-cancer risk (HI = 100) is posed by using the leachate as a groundwater source, inhalation of volatile organic compounds, surface soil exposure and consumption of home grown vegetables.

ENVIRONMENTAL RISKS

The purpose of the ecological assessment is to identify contaminants of potential ecological concern associated with

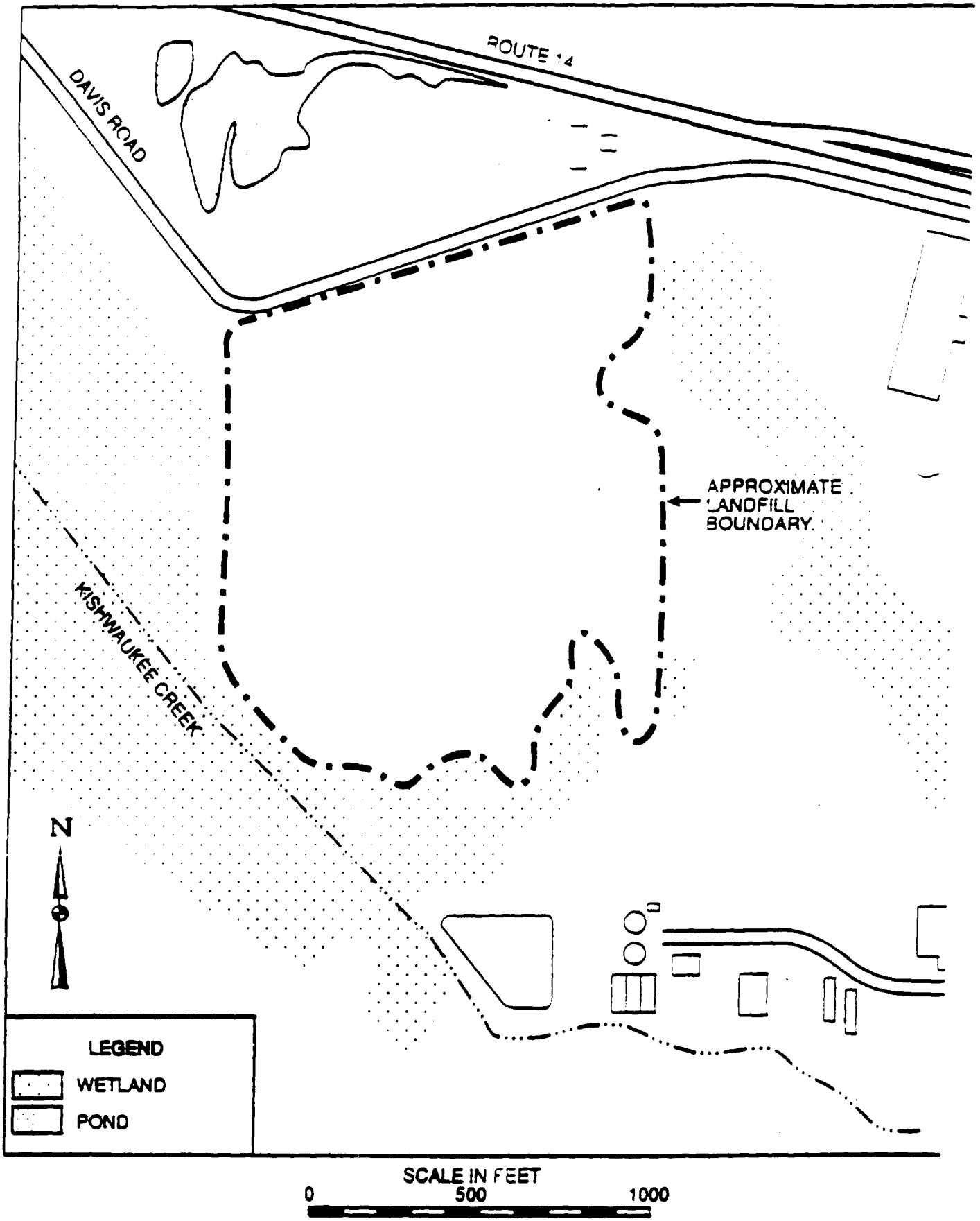


FIGURE 5
ECOLOGICAL FEATURES

WOODSTOCK MUNICIPAL LANDFILL
WOODSTOCK, IL

the site and their effects on plant or animal species of concern. The ecological features of the site are shown on Figure 5. The assessment conducted for the Woodstock site has determined that copper, mercury, and zinc concentrations in the surface soils at the site may adversely affect small terrestrial mammal populations. Exposure of aquatic species to iron which was detected in exceedance of regulatory criteria also poses a potential risk. No conclusions could be reached as to whether past ecological effects have occurred due to the presence of other inorganic contaminants in surface water and sediments at the site due to the lack of biota sampling or biological assays. Additional ecological assessments will be conducted by the Natural Resources Trustee/U.S. Fish and Wildlife Service at the site.

SUMMARY

Actual and threatened releases of hazardous substances are occurring from this site. The source of the risks originate from the contaminants within and emanating from the landfill through releases to groundwater, surface water, sediments, soils, and air. If not addressed, these releases may present an imminent and substantial endangerment to public health, welfare or the environment. Thus, it is necessary that corrective and mitigative action be taken to address the threats posed by the actual or threatened releases.

VII. Description of Alternatives

Based on the results of the RI, a list of alternatives was assembled to address the site remedial action objectives and ensure compliance with the requirements of the NCP. These alternatives are presented in the Feasibility Study prepared for the site. The following remedial alternatives were developed and are briefly described below.

ALTERNATIVE 1 NO ACTION

CERCLA requires that the "No Action" alternative be evaluated at every site to establish a baseline against which all other alternatives are compared. Under this alternative, no remedial actions would take place and the site would remain in its present condition.

Capital cost: 0
Annual maintenance and monitoring cost: $10,000
Estimated present net worth: $37,000
Estimated time to implement: None

Note: The $10,000 maintenance and monitoring cost is not an annual cost, but reflects the cost of reviewing site conditions on a five year basis.

ALTERNATIVE 2 ACCESS RESTRICTIONS, INSTITUTIONAL CONTROLS AND MONITORING

The purpose of Alternative 2 is to control access to the site, and to monitor the groundwater and existing landfill cover. The major elements of this alternative include:

* Institutional controls
* Fencing
* Monitoring

Institutional controls would include land use restriction and deed restrictions to preclude groundwater usage.

A chain-link fence would be installed and maintained around the perimeter of the site. The purpose of the fence would be to control access to the site, and thus, limit exposure to the surface soils on-site. Erosion control measures would be taken during fence construction to protect the adjacent wetlands.

The primary objectives of monitoring would be to monitor groundwater quality, wetlands water quality, and the condition of the existing landfill cover. Groundwater sampling and analysis would be conducted on a periodic basis. Visual inspections of the cover and monitoring for differential settlement would also be performed. The frequency of all sampling activities or inspections will be determined by the USEPA and IEPA (the "Agencies") during Remedial Design.

Capital cost: $124,000
Annual maintenance and monitoring cost: $25,000
Estimated present net worth: $614,000
Estimated time to implement: 1 month

ALTERNATIVE 3 - ACCESS RESTRICTIONS, INSTITUTIONAL CONTROLS, GROUNDWATER EXTRACTION SYSTEM, AND MONITORING

The purpose of Alternative 3 is to control access to the site, contain and treat the contaminated groundwater, and monitor the groundwater and existing landfill cover. The major elements of this alternative are:

* Institutional controls
* Fencing

* Monitoring
* Groundwater extraction, treatment, and discharge

Institutional controls would include land use restrictions and deed restrictions to preclude groundwater usage.

A chain-link fence would be installed and maintained around the perimeter of the site. The purpose of the fence would be to control access to the site, and thus, limit exposure to the surface soils on-site. Erosion control measures would be taken during fence construction to protect the adjacent wetlands.

The objectives of monitoring would be to assess the following: treatment system efficiency, groundwater and wetland quality, and the condition of the existing landfill cover. Groundwater and treatment system sampling and analyses would be conducted on a periodic basis. The landfill cover would also be periodically inspected visually and monitored for differential settlement. The frequency of all sampling activities and inspections will be determined by the Agencies during Remedial Design.

The groundwater extraction system would consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would then be pumped from the extraction system to the publicly owned treatment works (POTW). On-site treatment will be required only if pretreatment standards are exceeded during this action.

Capital cost: $576,000
Annual maintenance and monitoring cost: $101,000
Estimated present net worth: $1,414,000
Estimated time to implement: 6 months

ALTERNATIVE 4 - INSTITUTIONAL CONTROLS, RECONSTRUCT EXISTING COVER, AND MONITORING

The purpose of Alternative 4 is to minimize infiltration, promote surface water runoff, eliminate leachate seeps, and isolate the contaminants of concern. The major elements of this alternative include:

* Institutional controls
* Monitoring
* Cover reconstruction

Institutional controls would include land use restrictions and deed restrictions to preclude groundwater usage.

Periodic monitoring would be conducted to evaluate the

condition of the reconstructed landfill cover, the sedimentation basin and wetlands water quality, and groundwater quality. The reconstructed cover would be monitored periodically for differential settlement. The frequency of all sampling activities and inspections will be determined by the Agencies during Remedial Design.

The landfill cover would be reconstructed by removing existing trees and brush on the landfill, sealing leachate seeps, regrading the site, locating a suitable borrow site for fill material, importing fill material as necessary, placing this fill on top of the existing surface soils, and vegetating the new cover. A minimum cover thickness of 2 ft. would be established over the entire landfill. In areas where sewage sludge has been deposited on the landfill, a minimum of 6 in. of new soil will be placed, regardless of the depth of existing cover soils. The reconstructed cover would also be sloped by filling and regrading to promote surface water drainage from the landfill area. The reconstructed cover would extend to the edge of the landfill and would avoid the adjacent wetlands. The trees and brush removed from the landfill would be appropriately disposed of, as approved by the Agencies. Erosion control measures would be taken to protect the perimeter wetlands. A surface water control system would also be part of this remedy.

Capital cost: $4,418,000
Annual maintenance and monitoring cost: $69,000
Estimated present net worth: $5,770,000
Estimated time to implement: 6 months

ALTERNATIVE 5 - INSTITUTIONAL CONTROLS, RECONSTRUCT EXISTING COVER, GROUNDWATER EXTRACTION SYSTEM, AND MONITORING

The major elements of Alternative 5 are the same as Alternative 4 with remediation of contaminated groundwater included. These elements would therefore include:

- Institutional controls
- Monitoring
- Cover reconstruction
- Groundwater extraction, treatment, and discharge

The first three elements of this alternative were discussed in Alternative 4. The fourth element, the groundwater extraction system, would consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would then be pumped from the extraction system to an on-site treatment facility if the POTW pretreatment standards were exceeded during this

action.

Capital cost: $4,860,000
Annual maintenance and monitoring cost: $129,000
Estimated present net worth: $6,490,000
Estimated time to implement: 6 months

ALTERNATIVE 6 - INSTITUTIONAL CONTROLS, CONSTRUCT GEOSYNTHETIC CLAY CAP, AND MONITORING

The purpose of Alternative 6 is to minimize infiltration, promote surface water runoff, eliminate leachate seeps, and isolate the contaminants of concern. The major elements of this alternative include:

* Institutional controls
* Monitoring
* Geosynthetic clay cap

Institutional controls would include land use restrictions and deed restrictions to preclude groundwater usage.

The primary objectives of monitoring would be to monitor sedimentation basin and wetlands water quality, groundwater quality, and the condition of the landfill cap. Periodic groundwater sampling and analysis would be performed. Regular visual inspections would be conducted to evaluate the integrity of the landfill cap, and to check for erosion and differential settlement.

The landfill cap would be constructed as specified in 35 IAC 811.314. Generally, this includes removing the existing trees and brush, regrading the surface, sealing the leachate seeps, placement of a geosynthetic liner with a bentonite component, placement of a drainage layer, a rooting zone layer, and topsoil. The cap would then be revegetated. The geosynthetic clay layer would have a permeability comparable to 3 ft. of compacted clay (1×10^{-7} cm/s). The geosynthetic clay cap would extend to the edge of the landfill and would avoid the adjacent wetlands. The trees and brush removed from the landfill would be appropriately disposed of, as approved by the Agencies. The drainage layer will be designed so as to route landfill gases to a venting system. Erosion control measures would be taken to protect the perimeter wetlands. A surface water control system will be designed appropriate to the final grade such that it will limit erosion of the landfill cover from sheet flow, will not cause degradation of adjacent wetlands, meet local stormwater retention requirements, and allow for the monitoring of surface water runoff at distinct discharge

points.

Capital cost: $6,612,000
Annual maintenance and monitoring cost: $69,000
Estimated present net worth: $7,964,000
Estimated time to implement: 6 months

ALTERNATIVE 7 - INSTITUTIONAL CONTROLS, CONSTRUCT GEOSYNTHETIC CLAY CAP, GROUNDWATER EXTRACTION SYSTEM, AND MONITORING

The major elements of Alternative 7 are the same as those in Alternative 6 with remed tion of contaminated groundwater included. These element would therefore include:

* Institutional controls
* Monitoring
* Geosynthetic clay cap
* Groundwater extraction, treatment, and discharge

The first three elements of this alternative were discussed in Alternative 6. The fourth element, the groundwater extraction system, would consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would then be pumped from the extraction system to the POTW. On-site treatment will be required only if pretreatment standards are exceeded during this action.

Capital cost: $7,054,000
Annual maintenance and monitoring cost: $129,000
Estimated present net worth: $8,681,000
Estimated time to implement: 6 months

ALTERNATIVE 8 - INSTITUTIONAL CONTROLS, CONSTRUCT RCRA SUBTITLE D (i.e., SOLID WASTE-TYPE) CAP, AND MONITORING

The purpose of Alternative 8 is to minimize infiltration, promote surface water runoff, eliminate leachate seeps, and isolate the contaminants of concern. The major elements of this remedy include:

* Institutional controls
* Monitoring
* Solid waste-type cap

Institutional controls would include land use restrictions and deed restrictions to preclude groundwater usage.

The primary objectives of monitoring would be to monitor sedimentation basin and wetlands water quality, groundwater quality, and the condition of the landfill cap. Periodic groundwater sampling and analysis would be performed. Regular visual inspections would be conducted to evaluate the integrity of the landfill cap, and check for erosion and differential settlement.

Cap construction would involve the construction of a RCRA Subtitle D solid waste-type cap which would seal the leachate seeps, limit infiltration, and promote surface water drainage from the landfill area. Construction would begin with removal of the trees and brush on the landfill. The trees and brush removed would be appropriately disposed of, as approved by the Agencies. A borrow site would be located for fill materials, of which a clay source will be of primary importance. Fill material would be imported to provide grades suitable for positive drainage. The constructed cap would generally consist of a low permeability clay layer placed to a compacted thickness of 3 ft. A 2.5 ft. protective soil cover may be placed above the clay. A 6 in. organic topsoil layer may then be placed and vegetated.

Capital cost: $9,204,000
Annual maintenance and monitoring cost: $69,000
Estimated present net worth: $9,854,000
Estimated time to implement: 9 months

ALTERNATIVE 9 - INSTITUTIONAL CONTROLS, CONSTRUCT RCRA SUBTITLE D (i.e., SOLID WASTE-TYPE) CAP, GROUNDWATER EXTRACTION SYSTEM, AND MONITORING

The major elements of Alternative 9 are the same as Alternative 8 with remediation of contaminated groundwater included. These elements would therefore include:

- Institutional controls
- Monitoring
- Solid waste-type cap
- Groundwater extraction, treatment, and discharge

The first three elements of this alternative were discussed in Alternative 8. The fourth element, the groundwater extraction system, would consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would then be pumped from the extraction system to the POTW. On-site treatment will be required only if pretreatment standards are exceeded during this action.

Capital cost: $9,646,000
Annual maintenance and monitoring cost: $129,000
Estimated present net worth: $11,273,000
Estimated time to implement: 9 months

ALTERNATIVE 10 - INSTITUTIONAL CONTROLS, CONSTRUCT RCRA SUBTITLE C (i.e., HAZARDOUS WASTE-TYPE) CAP, AND MONITORING

The purpose of Alternative 10 is to minimize infiltration, promote surface water runoff, eliminate leachate seeps and isolate the contaminants of concern. The major elements of this remedy include:

* Institutional controls
* Monitoring
* Hazardous waste-type cap

Institutional controls would include land use restrictions and deed restrictions to preclude groundwater usage.

The primary objectives of monitoring would be to monitor sedimentation basin and wetlands water quality, groundwater quality, and the condition of the landfill cap. Groundwater sampling and analysis would be done on a periodic basis. Periodic visual inspection of the landfill cap and monitoring for differential settlement would also be performed.

Cap construction would involve the construction of a RCRA Subtitle C hazardous waste-type cap which would seal the leachate seeps, limit infiltration, and promote surface water drainage from the landfill area. Construction of the landfill cap would begin with removal of the trees and brush on the landfill. The trees and brush removed would be appropriately disposed of, as approved by the Agencies. A borrow site would be located for fill materials, of which a clay source will be of primary importance. Fill material would be imported to provide grades suitable for positive drainage. The RCRA Subtitle C cap would generally include the following components: a 2 ft. thick compacted clay layer, a 40 ml. high density polyethylene flexible membrane liner, a 1 ft. thick drainage layer, an 18 in. rooting zone, a 6 in. topsoil layer, and a vegetative cover.

Capital cost: $12,244,000
Annual maintenance and monitoring cost: $69,000
Estimated net worth: $13,596,000
Estimated time to implement: 1 year

ALTERNATIVE 11 - INSTITUTIONAL CONTROLS, CONSTRUCT RCRA SUBTITLE C (i.e., HAZARDOUS WASTE-TYPE) CAP, GROUNDWATER EXTRACTION SYSTEM, AND MONITORING

The major elements of Alternative 11 are the same as Alternative 10 with remediation of contaminated groundwater included. These elements would therefore include:

* Institutional controls
* Monitoring
* Hazardous waste-type cap
* Groundwater extraction, treatment and discharge

The first three elements of this alternative were discussed in Alternative 10. The fourth element, the groundwater extraction system, would consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would then be pumped from the extraction system to the POTW. On-site treatment would be required only if pretreatment standards were exceeded during this action.

Capital cost: $12,686,000
Annual maintenance and monitoring cost: $129,000
Estimated present net worth: $14,313,000
Estimated time to implement: 1 year

VIII. Evaluation of Alternatives

The NCP requires that the alternatives be evaluated against nine evaluation criteria. This section summarizes the relative performance of the alternatives by highlighting the key differences among the alternatives in relation to these criteria. The nine evaluation criteria are categorized as: (1) Threshold Criteria; (2) Primary Balancing Criteria; and (3) Modifying Criteria. Each of these terms is described as follows:

- Threshold Criteria

  - **1) Overall protection of human health and the environment** addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced or controlled through treatment and engineering controls. The selected remedy must meet this criteria.

  - **2) Compliance with applicable or relevant and**

appropriate requirements (ARARs) addresses whether a remedy will meet federal and state environmental laws or justifies a waiver from such requirements. The selected remedy must meet this criteria or waiver of the ARAR must be obtained.

- Primary Balancing Criteria

  - **3) Long-term effectiveness and permanence** refers to expected residual risk and the ability of a remedy maintain reliable protection of human alth and the environment over tir once cleanup goals have been met.

  - **4) Reduction of toxicity, mobility, and volume** through treatment is the anticipated performance of the treatment technologies a remedy may employ.

  - **5) Short-term effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed, until cleanup goals are achieved.

  - **6) Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

  - **7) Cost** includes estimated capital and operation and maintenance (O&M) costs, also expressed as net present-worth cost.

- Modifying Criteria

  - **8) Support Agency (IEPA)** acceptance reflects aspects of the preferred alternative and other alternatives the IEPA favor or object to, and any specific comments regarding federal and state ARARs or the proposed use of waivers.

  - **9) Community acceptance** summarizes the public's general response to the alternatives described in the proposed plan and in the RI/FS, based on public comments received.

A detailed discussion of all the alternatives, including the "No Action" alternative, has been provided in the FS. This evaluation also includes an evaluation against the nine criteria. The NCP requires that the "No Action" alternative be evaluated to establish a baseline against which all other alternatives are measured. A summary of the evaluation discussion is provided below.

Overall Protection of Human Health and the Environment

Based upon the detailed analysis, it was concluded that Alternatives 1 through 5 would not satisfy the criterion of ensuring the overall protection of human health and the environment. The baseline risk assessment has documented unacceptable risks present at the site and these alternatives do not meet the criterion either because no remedial action would be taken (Alternative 1) or the remedial actions specified would not adequately address the present and future risks posed by the site, or adequately prevent further leachate generation and releases of contaminants to the environment.

The remaining Alternatives, 6 through 11, would be protective of human health and the environment in regards to exposure to surface soils. The differences in cap design among these alternatives is a function of their complexity and would not result in increased protectiveness from surface soil exposure. However, the increased cap complexity would affect leachate generation with the cap specified in Alternatives 10 and 11 yielding the least amount of leachate generation. The surface water seeps which are a result of leachate generation are expected to be eliminated through placement of a cap on the landfill. The caps for Alternatives 6 through 9 would permit slightly greater infiltration rates than the caps for Alternatives 10 and 11. This would result in slightly greater leachate generation than that provided by Alternatives 10 and 11.

The caps proposed may have the undesirable effect of trapping gas inside the landfill, resulting in a potential increase in lateral migration of landfill gas. This will be remedied through placement of a venting system in the landfill.

Alternatives 6, 8, and 10 would not be protective of human health and the environment with respect to groundwater in that no remedial activities are proposed in these alternatives to address this potential or actual risk to human health and the environment.

Compliance With ARARS

Only Alternative 7 would comply with all chemical, action, and location specific ARARs associated with the site. More specifically, Alternatives 1 through 5 would not comply with the action-specific or chemical-specific ARARs which require landfill capping (IAC 811) and remediation of the contaminated groundwater (40 CFR 141 and 35 IAC 620.410). Alternatives 6, 8, and 10 would not comply with chemical-specific ARARs since these alternatives do not require remediation of the contaminated groundwater. Alternatives 9 and 11 would not meet the location-specific ARAR (40CFR 6) since these alternatives would result in the loss of wetlands due to cap placement and other remedial alternatives exist which would not require mitigating the loss of these wetlands. If an alternative were chosen that results in a loss of wetlands, mitigating the loss of those wetlands generally requires replacement on a 2 to 1 ratio. A listing of all ARARs associated with each alternative can be found in Table 11 of the FS.

Long-term Effectiveness and Permanence

Capping the landfill would contain the surface soils, sediments, sludges and wastes effectively. A cap would permanently reduce infiltration into the landfill therefore reducing leachate generation to the maximum extent practicable. Alternatives 10 and 11 would provide the most effective infiltration reduction option of all the alternatives. However, since the waste mass is in conta- with groundwater, the more effective infiltration reduct. achieved by Alternatives 10 and 11 is not considered to : significant in comparison to either of t: caps specifie: in Alternatives 6 and 7 or 8 and 9. All the capping alternatives (4 through 11) would eliminate human exposure to the contaminated surface soils and would also minimize the ecological risks posed by this media with Alternatives 10 and 11 being most protective due to the thickness of the cap.

The alternatives addressing groundwater extraction (3, 5, 7, 9, and 11) would be effective in preventing further migration of the vinyl chloride and would ultimately eliminate the threat posed by this media through extraction and treatment.

Reduction of Toxicity, Mobility or Volume

None of the alternatives would reduce toxicity or volume the in-situ landfill wastes. Alternatives 1 through 3 w ld only require monitoring and institutional controls. Alternatives 4 through 11 are containment alternatives and

would also not reduce the toxicity and volume of in-situ wastes. However, the capping alternatives would reduce the volume of leachate being produced by minimizing infiltration. This would also reduce the mobility of the contaminants. Alternatives 5, 7, 9, and 11 would reduce the toxicity, mobility and volume of contaminants in the groundwater through an active groundwater extraction system.

Short-term Effectiveness

Alternatives 5, 7, 9, and 11 would result in compliance with groundwater standards through extraction of the contaminated groundwater and treatment at the POTW. A higher level of risk is associated with these alternatives due to the potential dewatering of the wetlands. Design of the system must preclude this from occurring. In addition, erosion controls, drainage swales, and sedimentation basins are necessary to protect the wetlands during construction as well as after construction is complete. Remediation activities would also result in increased risk of injury due to increased truck traffic on other related construction activities. The increase in dust generation must also be minimized through dust control measures or the use of personal protective equipment by workers. It is expected that the duration of capping activities specified in Alternatives 4 through 11 will not exceed one year. Remediation of the contaminated groundwater as called for in Alternatives 3, 5, 7, 9, and 11 is not expected to exceed five years.

Implementability

All the alternatives are readily implementable. The capping alternatives and those alternatives specifying groundwater extraction have been proven to be an effective technology in remediating similar threats on other sites. Technologies for constructing a groundwater extraction system are relatively easy to implement, well developed, and are reliable. If treatment is required before discharge, the technologies for treatment are proven and readily implementable.

Cost

The costs for the eleven identified alternatives range from $37,000 (Alternative 1) up to $14,313,000 (Alternative 11) in terms of present net worth. The capital costs range from $0 (Alternative 1) up to $12,686,000 (Alternative 11). The following summary table lists each alternative and the associated costs:

ALTERNATIVE	COSTS Capital	O&M	PNW
1. No Action	$0	$10,000	$37,000
2. Access Restrictions and Monitoring	$124,000	$25,000	$614,000
3. Access Restrictions, Groundwater Extraction System, and Monitoring	$576,000	$101,000	$1,414,000
4. Access Restrictions, Reconstruct Existing Cover, and Monitoring	$3,935,000	$69,000	$5,287,000
5. Access Restrictions, Reconstruct Existing Cover, Groundwater Extraction System, and Monitoring	$4,378,000	$129,000	$6,005,000
6. Access Restrictions, Construct Geosynthetic Clay Cover, and Monitoring	$6,612,000	$69,000	$7,964,000
7. Access Restrictions, Construct Geosynthetic Clay Cover, Groundwater Extraction System, and Monitoring	$7,054,000	$129,000	$8,681,000
8. Access Restrictions, Construct RCRA Subtitle D (i.e., solid waste-type) Cover, and Monitoring	$9,204,000	$69,000	$9,854,000
9. Access Restrictions, Construct RCRA Subtitle D (i.e., solid waste-type) Cover, Groundwater Extraction System, and Monitoring	$9,646,000	$129,000	$11,273,000
10. Access Restrictions, Construct RCRA Subtitle C (i.e., hazardous waste-type) Cover, and Monitoring	$12,244,000	$69,000	$13,596,000

ALTERNATIVE	COSTS Capital	O&M	PNW
11. Access Restrictions, Construct RCRA Subtitle C (i.e., hazardous waste-type) Cover, Groundwater Extraction System, and Monitoring	$12,686,000	$129,000	$14,313,000

State Acceptance

The State of Illinois, through IEPA, is expected to concur with the U.S. EPA's recommendation of Alternative 7 as the preferred alternative for the Woodstock site.

Community Acceptance

A summary of both written and verbal comments received by the U.S. EPA during the public comment period has been attached as Appendix II. Generally, the remedy was highly controversial due to the potential local tax implications associated with implementing the remedy. As is reflected in the attached summary, there was one faction of residents who strongly supported the proposed remedy and another faction in opposition.

IX. Description of Selected Remedy

The U.S. EPA and IEPA have conducted an analysis of the potential remedies and have selected Alternative 7 as the remedy for the Woodstock site.

The purpose of Alternative 7 is to minimize infiltration, promote surface water runoff, eliminate leachate seeps, isolate the waste, and remediate the contaminated groundwater. The major elements of this alternative include:

* Institutional controls
* Monitoring
* Geosynthetic clay cover
* Groundwater extraction, treatment, and discharge

Institutional controls will include land use restrictions to prevent future development of the site and adjoining

property and to preclude construction of any structure which may be detrimental to the remedy. Deed restrictions are already in place at the site which preclude groundwater usage and would be amended and expanded, as necessary, to the satisfaction of the Agencies to prohibit the installation of water supply wells on property which could potentially be impacted by vinyl chloride contamination.

The primary objectives of monitoring will be to monitor sedimentation basin and wetlands water quality, groundwater quality, and the condition of the landfill cover. Periodic groundwater sampling and analysis will be performed. Regular visual inspections will be conducted to evaluate the integrity of the landfill cover, and check for erosion and differential settlement. Long term maintenance will be conducted to assure that the components of this remedy remain effective. The frequency of all sampling activities and inspections will be determined by the Agencies during Remedial Design.

The landfill cap would be constructed as specified in 35 IAC 811.314. Generally, this includes removing the existing trees and brush on the landfill, placement of the contaminated soils and sediments on the landfill surface, regrading the surface using existing on-site soils and at least 6 inches of supplemental granular soils to achieve and maintain positive drainage, sealing the leachate seeps, placement of a geosynthetic membrane which will include a bentonite layer, placement of a drainage layer, a rooting zone layer, and topsoil. The cap would then be revegetated. During the design of the remedy, the potential use of native vegetation will be investigated in conjunction with the Soil Conservation Service. The final cap design and vegetative cover will then be selected at the completion of this process. The barrier layer will have a permeability equal or superior to 3 feet of compacted clay at $1x10^{-7}$ cm/s. The geosynthetic clay cap will extend to the edge of the landfill and will avoid the adjacent wetlands. Trees and brush removed from the landfill would be appropriately disposed of. The grading layer will be designed so as to route landfill gases to a venting system. Perimeter side slopes are to be regraded to allow for no impact to the wetlands and accommodate the design requirements of the landfill cap. Erosion control measures would be taken to protect the perimeter wetlands. A surface water control system will be designed appropriate to the final grade such that it will limit erosion of the landfill cover from sheet flow, will not cause degradation of adjacent wetlands, meet local stormwater retention requirements, and allow for the monitoring of surface water runoff at distinct discharge points. The precise design of the cap components and

associated engineering or environmental requirements will be reviewed and approved by the Agencies during Remedial Design.

The groundwater extraction system will consist of installing groundwater extraction wells in the area of vinyl chloride contamination. Groundwater would be pumped from the extraction system to an on-site treatment facility if the POTW pretreatment standards were exceeded. The goal of this remedial action is to restore ground water to its beneficial use, which is, at this site, a drinking water resource. Therefore, remediation will continue until such time that the MCL (and equivalent state standard) of 2 ppb is attained. Based on information obtained during the remedial investigation and on a careful analysis of all remedial alternatives, U.S. EPA and IEPA believe that the selected remedy will achieve this goal. However, it may become apparent, during design, implementation or operation of the ground water extraction system and its modifications, that contaminant levels have ceased to decline and are remaining constant at levels higher than the remediation goal over some portion of the plume or that a more effective technology may be warranted. In such a case, the system performance standards and/or the remedy may be evaluated and changes to the system or a different technology may be required which would allow the Agencies to achieve ARARs.

The selected remedy will include ground water extraction during which the system's performance will be carefully monitored on a regular basis, as determined by the Agencies, and adjusted as warranted by the performance data collected during operation. Modifications may include any or all of the following:

- Discontinuing pumping at individual wells where cleanup goals have been attained;
- Alternating pumping at wells to eliminate stagnation points;
- Pulse pumping to allow aquifer equilibration and to allow adsorbed contaminants to partition into ground water;
- Installing additional extraction wells to facilitate or accelerate cleanup of the contaminant plume.

To ensure that cleanup levels are maintained and that the cap prevents all further releases from occurring, the site will be monitored on a frequency as required by the Agencies. If further releases do occur, the Agencies may require that further remedial actions are undertaken to

eliminate these releases.

The sediments that contain levels of contamination that exceed background levels will be excavated and placed under the new landfill cover. The wetlands areas from which these sediments are removed must then be restored to their original conditions. Excavation and consolidation of these sediments under the cap will reduce the exposure potential to humans or wildlife to this contaminated media.

X. Statutory Determinations

The selected remedy must satisfy the requirements of Section 121 of CERCLA to:

A. Protect human health and the environment;
B. Comply with ARARs;
C. Be cost-effective;
D. Utilize permanent solutions and alternate treatment technologies to the maximum extent practicable; and
E. Satisfy the preference for treatment as a principle element of the remedy.

The implementation of the selected remedy at the Woodstock site satisfies the requirements of CERCLA as detailed below:

A. Protection of Human Health and the Environment

Implementation of the selected remedy will reduce and control potential risks to human health posed by exposure to contaminated ground water, soil, landfill waste, surface water, and sediments. The selected remedy will reduce potential exposure to contaminated groundwater and surface soils to within acceptable an acceptable risk range. The contaminated groundwater will be remediated until the MCL of 2 ppb is reached. The selected remedy also protects the environment from the potential risks posed by contaminants discharging to ground water, Kishwaukee River, surrounding soils, sediments, and wetlands.

Institutional controls will be implemented to protect against drinking of contaminated ground water at the site and prohibit construction which could be detrimental to the remedy.

Capping the landfill, in addition to reducing the potential risk posed by exposure to landfill contaminants, will reduce precipitation infiltration through the cap thereby reducing leachate generation. Ground water contaminant loading, leachate generation, and seepage into the wetlands would

then be reduced or eliminated.

Gas venting will reduce potential risks due to the landfill gases.

Excavation and consolidation of contaminated sediments under the landfill cap will reduce the exposure potential to humans or wildlife posed by these sediments.

No unacceptable short-term risks will be caused by implementation of the remedy. However, the nearby community, and site workers, may be exposed to noise and dust nuisances during construction. Standard safety measures should manage any short-term risks. Dust control measures would mitigate risks as well. Mitigative measures, as specified during design, will be taken to prevent and address adverse environmental impacts.

B. Compliance with ARARs

With respect to any hazardous substances, pollutants or contaminants that will remain on-site, CERCLA (§ 121 (2) (A)) requires the U.S. EPA to select a remedial action which complies with legally applicable or relevant and appropriate standards, requirements, criteria or limitations (ARARs). The selected remedy will comply with Federal ARARs or State ARARs where State ARARs are more stringent, as determined by U.S. EPA. The remedy will be implemented in compliance with applicable provisions of CERCLA and the NCP.

1. Chemical-Specific ARARs

Chemical-specific ARARs regulate the release to the environment of specific substances having certain chemical characteristics. Chemical-specific ARARs typically define the extent of cleanup at a site.

a. Soils/Sediments

There are no chemical-specific standards established for soils and sediments.

b. Ground Water

i). Federal ARARs

Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Secondary Maximum Contaminant Levels (SMCLs) are ARARs for the site.

ii). State ARARs

The State of Illinois is authorized to administer the implementation of the Federal SDWA. The State also has ground water quality standards promulgated under Title 35, Subtitle F, Chapter I, Part 620. According to the State of Illinois' classification system, the aquifer underlying the site is Class I potable resource groundwater. Class I groundwqter quality standards listed under 620.410 are ARARs for the ground water at the Woodstock site.

In the event that discharge of the contaminated groundwater to the POTW is not acceptable without on-site treatment, IAC 35, Part 218 would then be an ARAR for the site.

c. Surface Water

i). Federal ARARs

Federal water quality criteria (WQC) are guidelines that set pollutant concentration limits to protect surface waters that are applicable to point source discharges, such as from industrial or municipal wastewater streams. At a Superfund site, the Federal WQC would not be ARARs except for pretreatment requirements for discharge of treated water to a Publicly Operated Treatment Works (POTW). Since the selected remedy plans to discharge to the local POTW, these requirements are ARARs for the Woodstock site. The AWQCs for protection of freshwater aquatic organisms are ARARs for the Woodstock site remedy for any direct discharges to the Kishwaukee River.

ii). State ARARs

The State of Illinois has been authorized to implement the National Pollutant Discharge Elimination System (NPDES) established under the CWA, as specified in IAC 35, Part 309. For any discharge to waters of the State of Illinois, the chemical specific standards of Title 35, Subtitle C, Subpart B, Section 302.208 and toxic substances standards of Section 302.210 of the Illinois Administrative Code establishing General Use Water Quality Standards would be ARARs.

2. Location Specific ARARs

Location-specific ARARs are those requirements that relate to the geographical position of a site. These include:

a. Federal ARARs

40 CFR 6 - Protection of Wetlands is an ARAR for any

remedial action taken within wetlands. This ARAR requires that activities required in a wetland must minimize the destruction, loss, or degradation of the wetland. In addition, any affected wetlands may be restored, as appropriate. In addition, a permit from the U.S. Army Corps of Engineers may be required due to the potential that activities during construction may impact the wetlands.

Endangered Species Act (16 USC 1531) - The Endangered Species Act requires that actions must be performed to conserve the endangered or threatened species located in and around the Woodstock site. Activities must not destroy or adversely modify the critical habitat upon which endangered species depend. The selected remedy will be implemented in compliance with this regulation.

b. State ARARs

Endangered Species Protection Act, Title 17 Conservative Chapter 1, Subchapter C, Part 1075 Illinois Administrative Rules - Under this requirement, actions must be performed to conserve the endangered or threatened species located in and around the Woodstock site. Activities must not destroy or adversely modify the critical habitat upon which endangered species depend. The selected remedy will be implemented in compliance with this regulation. Prior to conducting remedial activities, a survey of the subject areas will be conducted to determine whether or not endangered or threatened species will be affected.

3. Action-Specific ARARs

Action-specific ARARs are requirements that define acceptable treatment and disposal procedures for hazardous substances.

It is unknown at this time whether or not the collected ground water will require treatment prior to discharge to the POTW. If required, any treatment system utilized will be operated in compliance with all ARARs including 40 CFR 403.

40 CFR 122 is an ARAR at this site in regards to surface water runoff which includes stormwater runoff.

29 CFR 1910 and 1926 are OSHA requirements which are ARARs at the site.

a. State ARARs

The selected remedy will comply with substantive requirements of Title 35, Illinois Solid and Special Waste Management Regulations, Section 811, Subpart C for closure of solid wastes landfills, specifically relating to final cover, air pollution, and closure requirements, as required.

Groundwater that is treated and discharged shall comply with 35 IAC, Part 307 as well as 35 IAC, Part 310 which are ARARs for this site since pretreatment standards, permitting, and reporting requirements must be met for POTW discharge.

35 IAC, Part 620.250 which provides for the establishment of a groundwater management zone is an ARAR for the site.

C. Cost Effectiveness

Cost effectiveness is determined by evaluating the following three of the five balancing criteria to determine overall effectiveness: long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost effective.

The selected remedy provides overall cost effectiveness because it provides adequate long-term effectiveness and permanence. Secondary reduction in toxicity, mobility, and volume is accomplished through treatment of the ground water. No unacceptable short-term risks will be caused by implementation of the remedy.

D. Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. This finding was made after evaluation of the protective and ARAR-compliant alternatives for the Woodstock site remedial action and comparison of the "trade-offs" (advantage vs. disadvantages) among the remedial alternatives with respect to the five balancing criteria (see discussion above).

E. Preference for Treatment as a Principle Element

The principle threats at the Woodstock site are the

contaminated ground water and contaminated soil and leachate. The selected remedy uses treatment as a secondary element of the remedy through the collection and treatment of contaminated groundwater. Due to the large volume and heterogeneous distribution of waste throughout the landfill, treatment of the landfill material itself is not practicable at this site.

Attachment 2 - - Scope of Work: Woodstock Municipal Landfill Superfund Site

ATTACHMENT 2

SCOPE OF WORK

REMEDIAL DESIGN AND REMEDIAL ACTION
AT
WOODSTOCK MUNICIPAL LANDFILL SITE
WOODSTOCK, ILLINOIS

I. Purpose

The purpose of this Scope of Work (SOW) for the Woodstock Municipal Landfill Site (the "Site"), as defined in the Unilateral Administrative Order (UAO), is to implement the Record of Decision (ROD) for the Site which was signed by the Regional Administrator on June 30, 1993. The UAO to which this SOW is appended, EPA Superfund Remedial Design and Remedial Action (RD/RA) Guidance, the ROD, the approved RD/RA Work Plan, any additional guidance supplied by EPA and this SOW shall be followed in designing, constructing, implementing, operating, and in submitting deliverables for the work at the Site.

The work to be implemented by the Respondents shall include, but is not limited to, the following components:

A. fencing (§III.A);
B. contaminated soil/sediment excavation and consolidation (§III.B);
C. capping (§III.C);
D. groundwater remediation and treatment system (§III.D);
E. landfill gas collection system (§III.E);
F. well monitoring and remedy monitoring programs (§III.F);
G. institutional controls (§III.G);
H. predesign, additional and supplemental investigations and studies (§III.H);
I. correction of work deficiencies (§III.I); and
J. wetland mitigation (§III.J).

In order to achieve the reduction of total risks to acceptable levels, the Respondents shall achieve and maintain the Performance Standards specified in the ROD and herein.

II. General Provisions

Materials Sampling

All soils, clay, fill, and construction materials used for implementation of the remedy shall be subject to EPA approval. Representative samples of soils, clay, fill, and construction materials used for implementation of the remedy shall be tested prior to their use to verify that background concentrations (see III.B) are not exceeded and/or are suitable for the intended use and meet all applicable engineering, chemical, or general specifications. All soils, clay and fill materials shall be sampled and analyzed for all compounds, contaminants, or parameters as specified in the Predesign Work Plan, RD/RA Work Plan, Quality Assurance Project Plan (QAPP), and

supporting documents that are to be completed under this SOW and approved by EPA.

III. Description of the Remedial Action

The Performance Standards and specifications of the major components of the work for the Site which shall be designed and implemented by the Respondents are listed in the ROD and herein. Generally, this work constitutes construction of a landfill cap that meets or exceeds Illinois Administrative Code (IAC) Title 35, Subtitle G, Chapter 1, Subchapter i, Part 811.314. Also, the Respondents shall remediate contaminated groundwater until the Performance Standards are achieved. The work shall be designed, constructed, operated and maintained by the Respondents in accordance with the UAO, this SOW, the ROD and all EPA-approved plans and submittals required pursuant to this SOW.

The groundwater Performance Standards for the Site shall be the most stringent of Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), Secondary Maximum Contaminant Levels (SMCLs), and the substantive provisions of the Illinois Groundwater Quality Standards (for Class I water resources). The point-of-compliance for Performance Standards for the Site shall be adjacent to the landfill perimeter, as defined by the EPA. Performance Standards must be met at all times at all monitoring wells at and beyond the point-of-compliance.

After completion of the remedy components as required in the UAO or SOW, if an exceedance of Performance Standards at or beyond the point-of-compliance occurs, the Respondents shall implement additional response actions in compliance with this SOW and UAO. In addition to compliance with the Performance Standards set forth in the ROD and herein, the Respondents shall design, construct, operate and maintain the work to meet all applicable or relevant and appropriate Federal, State and local laws, regulations and standards regarding discharges of hazardous substances, pollutants or contaminants (ARARs) from the Site to the environment.

EPA will approve or disapprove schedules for construction and operation of the remedial components, including, if determined appropriate by EPA, schedules for phased or delayed installation of remedial components, after considering available information, including, but not limited to, Predesign and/or Additional and Supplemental Investigations and Studies.

A. Fence Installation

The Respondents shall install and maintain a fence around the Site during construction in order to prevent access to the Site and to prevent vandalism to the Site remedy components. The Respondents shall also install and maintain a permanent fence around those Site components requiring such security as specified by EPA at the completion of the construction activities.

The fence shall consist of a minimum six-foot high galvanized steel chain-link fence with a minimum three-strand barbed wire on top. The fence shall be installed around the perimeter of the Site during construction activities. Those Site components requiring permanent fencing shall be fully enclosed and shall have a locking gate entry for access.

The Respondents shall prepare and utilize a Surveying Report to correctly delineate the Site construction boundaries and properly establish the fence lines if such information does not currently exist. The fence shall be equipped with a locking swing gate at each access road.

Reflective warning signs shall be posted at 200-foot intervals along the fence and on the gate during construction. Warning signs shall also be posted as specified by EPA at each of the permanently secured Site component areas. The warning signs shall advise passersby that the area contains hazardous chemicals in soils and groundwater. The signs shall also provide a local telephone number to call for further information. These signs shall bear the following legend:

WARNING!

Woodstock Landfill EPA Superfund Site

AUTHORIZED PERSONNEL ONLY

THIS AREA CONTAINS HAZARDOUS CHEMICALS IN SOILS AND GROUNDWATER. CALL XXX-XXXX FOR FURTHER INFORMATION.

The Respondents shall inspect the entire fence (including warning signs) at a minimum of once every month to assure the fence is intact and unbreached. Incidents of vandalism, trespassing and breaches of the fence shall be recorded by the Respondents and reported and documented to local authorities and EPA as soon as possible after such incidents are reported to or discovered by the Respondents. Any damage or deterioration shall be repaired, or other maintenance performed, within seven (7) days of Respondents' becoming aware or receiving notice that repair or maintenance is necessary. Fence inspection and maintenance, vandalism, and other overall general monitoring activities shall be described in the Operation and Maintenance Plan (O & M Plan).

B. Consolidation of Contaminated Soil and Sediment

The Respondents shall excavate and consolidate onto areas within the landfill the Site soils, sediments, and any associated material (e.g. sludges or debris) from the affected areas around the Site and those portions of the Site where sludges were deposited which contain hazardous substances, pollutants or contaminants, at concentrations which exceed background concentrations established by this SOW, as determined by EPA.

A Sampling and Analysis Program shall be included in the Predesign Work Plan and shall describe the activities to be conducted to determine the location and extent of soils, sediments, and associated material to be excavated.

The RD/RA Work Plan shall include, at a minimum, the approximate boundaries of the areas to be excavated, the volume of material to be excavated, the location within the landfill where the excavated materials are to be consolidated, a program to confirm that adequate excavation has been performed (including a provision for post-excavation sampling), a contingency plan to address unexpected materials encountered during excavation, and the restoration plan to return the excavated areas to as near to their original condition as possible.

1. Determination of Background Concentrations and Extent of Contamination for Contaminated Soil and Sediment Excavation and Consolidation

For purposes of the UAO and this SOW, the background concentrations, the location(s) and the volume of contaminated soil and sediment excavation shall be determined by EPA, after reasonable opportunity for review and comment by the State, as follows:

a. Sampling of surface soils, subsurface soils, sediments, and associated materials shall be performed and reported by the Respondents, as required by the EPA-approved Predesign Work Plan;

b. Based on this sampling and other available data, Respondents shall submit proposed background concentrations, including supporting calculations, to EPA. EPA, after reasonable opportunity for review and comment by the State, will then establish baseline background concentrations of hazardous substances, pollutants or contaminants in surface and subsurface soils. Such concentrations proposed as being representative must be shown by the Respondents not to be attributable to site-derived or non-site-derived anthropogenic contaminants;

c. The Respondents shall calculate the locations, boundaries and depths of the areas of contaminated soils and sediments required to be excavated and consolidated in order to meet the Performance Standards. These calculations and the resulting delineation of areas and volumes to be excavated shall be reported to EPA as required by the schedule contained in the Predesign Work Plan, and shall be included in the Predesign Report that is submitted for EPA approval as required by the Predesign Work Plan. Once approved, the Predesign Report contents shall subsequently be reflected in the RD/RA Work Plan.

Surface soil is defined as the soil at depth of 0 - 6 inches from the surface. Subsurface soil is defined as the soil at depth of greater than 6 inches from the surface.

2. Contingency Plan

The Respondents shall also develop and submit to the EPA (as part of the RD/RA Work Plan) a Contaminated Soil and Sediment Excavation and Consolidation Contingency Plan to address the possible discovery and need for excavation of previously undetected wastes, such as but not limited to barrels or additional contaminated soils and sediments encountered during the excavation of soils and sediments during the design and construction of the work.

3. Final Volumes of Excavated and Consolidated Soil and Sediment

The final areas and volume of contaminated soil and sediment to be excavated and consolidated within the Site are subject to the approval of EPA, after reasonable opportunity for review and comment by the State, and Respondents' proposed final volumes and areas shall assure attainment of background concentrations.

C. Capping-Landfill Cover

The Respondents shall design, construct, install, operate and maintain a landfill cover and gas collection system over the landfill. The landfill cover shall be designed and installed to meet or exceed the substantive requirements of IAC Title 35, Subtitle G, Chapter 1, Subchapter i, Part 811.314 and those requirements as specified in the Record of Decision or this SOW. Upon completion, the Respondents shall install a surface water control system and vegetate the cover. The type of surface water control system and vegetative cover shall be determined during Predesign and shall be specified in the Predesign Report. The Respondents shall also conduct monitoring and maintenance as part of the long term requirements to be established in the EPA-approved O&M Plan.

The landfill cap construction shall be integrated and coordinated with the construction of the surface water control system, landfill gas collection system, the groundwater collection system and all other remedial components in order to assure cap integrity and minimal interference with other remedial components.

D. Installation and Operation of a Groundwater Remediation and Treatment System

The Respondents shall design, construct, operate and maintain a groundwater remediation and treatment system until Performance Standards are attained. The Respondents shall assure continued compliance with the Performance Standards through compliance demonstration as provided herein. This system shall be constructed, operated, and maintained in such a manner as to cause no degradation of the wetlands during installation, operation, and

demobilization of the system after attainment of Performance Standards. The system shall also be designed and constructed so as to minimize activity within the wetland and shall preclude the need for backfill or placement of any fill within the wetland. The results of the predesign investigations shall be used to determine the type and extent of groundwater remediation and treatment system to be constructed at the Site.

EPA, after reasonable opportunity for review and comment by the State, may require adjustments to the system after the Respondents are operating the system in accordance with the operating specifications approved by the EPA. Examples of adjustments which may be required by EPA include additional hydrologic studies, extraction wells and/or increased pumping rates.

The Respondents shall operate the system until EPA, after reasonable opportunity for review and comment by the State, approves shut-down of the system, pursuant to ¶ 3 below. The Respondents shall perform monitoring as required by ¶ 2 (Monitoring) below to assess the performance of the system.

The Respondents shall propose in the RD/RA Work Plan to either treat the extracted groundwater on-site prior to discharge or arrange for treatment of extracted groundwater at an off-site location. The EPA, after reasonable review and comment by the State, will approve or disapprove the proposed treatment option. The Respondents shall obtain all necessary permits and meet all requirements including effluent and discharge standards for the approved treatment method.

If truck-hauling to an off-site facility is necessary, the extracted groundwater shall be pumped to an on-site storage tank(s), which shall be emptied regularly, so as not to exceed, at any time, seventy-five percent (75%) storage capacity of the tanks. The volume of the tank(s) shall be sufficient to store, at a minimum, groundwater extracted over the period of one (1) week. The Respondents shall also provide for auxiliary tank capacity sufficient to store groundwater extracted during an additional three (3) days. The storage tanks and storage area(s) shall comply with all applicable or relevant and appropriate hazardous waste storage requirements of the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 et seq.

Alternatively, the Respondents may propose in the RD/RA Work Plan the construction of a force main from the Site to an existing sanitary sewer tributary to a publicly owned treatment works (POTW), to offset the need for on-site tankage and hauling. Pretreatment of extracted groundwater shall be performed by the Respondents if necessary prior to discharge to an off-site location, as approved by EPA. If discharging to a POTW is approved by EPA, after reasonable opportunity for review and comment by the State, and the POTW agrees to accept such discharges, the collection system shall be designed to prevent overloading the sewer system during storm events. At no time will discharges from

the Site be allowed to bypass the POTW treatment system during overload situations. The Respondents shall obtain the necessary permits required for this discharge option.

Predesign studies shall be performed by the Respondents to determine the operating parameters for the selected remediation system.

1. Groundwater Collection Performance Standards

The groundwater Performance Standards for the Site shall be the most stringent of MCLs, MCLGs, SMCLs, and the substantive provisions of the Illinois Groundwater Quality Standards (Class I). If no MCL, MCLG, SMCL, or state standard exists for a hazardous substance detected in groundwater at the Site, EPA, after reasonable opportunity for review and comment by the State, may establish a numerical groundwater compliance standard for such contaminant, based on consideration of health and risk-based levels.

The design of the groundwater collection system shall assure prevention of further migration of contaminants in groundwater beyond the point-of-compliance, and shall be sufficient to meet Performance Standards at the point-of-compliance.

Performance Standards must be met at all monitoring wells at and beyond the point-of-compliance. The Respondents shall perform groundwater modelling during predesign to determine the optimum operating parameters of the system. The type and extent of modelling shall be proposed in the Predesign Work Plan by the Respondents for EPA approval, after reasonable opportunity for review and comment by the State. The Performance Standards for the Site shall also be in conformance with the State's standards for establishment of a groundwater management zone.

If required by EPA, after reasonable opportunity for review and comment by the State, field tests shall be performed prior to the collection system operation to determine the optimum pumping rate for the system. In addition to the requirements of the sampling and monitoring program, analysis shall be performed by the Respondents as required by an off-site treatment facility, if such option is proposed by the Respondents and is approved by the EPA. Treatment shall be performed for the removal of chemicals or substances to the extent necessary to satisfy any permit or other requirements, including the discharge and pretreatment standards of the off-site treatment facility.

The Respondents shall apply for and obtain any and all permits and authorizations required for off-site treatment or disposal of extracted groundwater. The off-site treatment facility (if utilized) shall be subject to approval by EPA, after reasonable

opportunity for review and comment by the State, and shall be in compliance with CERCLA section 121(d)(1), EPA's CERCLA off-site policy as applicable, and applicable policies in effect at the time of treatment or disposal.

2. Groundwater Collection System Performance Monitoring

The performance of the collection system shall be assessed by implementation of a monitoring program designed to detect contaminant levels in the groundwater and extracted groundwater and an ecological assessment program to detect adverse changes to the wetland(s).

For purposes of monitoring the performance of the collection system, the Respondents shall sample and monitor groundwater quality, wetland quality and water level elevations in EPA-designated locations and/or wells at or beyond the point-of-compliance for all EPA-approved hazardous substances, contaminants, or parameters as directed in the RD/RA Work Plan. Hazardous substances, contaminants, parameters, and monitoring frequency shall be proposed by the Respondents in the RD/RA Work Plan and approved by the EPA. The frequency shall, at a minimum, document Site conditions, contaminant concentrations and water levels prior to startup of the system, at startup, and during operation such that a change in these parameters or Site conditions is noted in a timely manner so as to avoid adverse impacts to the environment while maximizing the system performance. Approval of the above work shall be made by EPA, after reasonable opportunity for review and comment by the State.

The Respondents shall submit to EPA a monthly summary report of all sampling data generated by monitoring activities. The report shall include, at a minimum, summary data tables, Site maps, a discussion of the potential significance, source and impact of contaminants detected, a delineation of any wetland impacts, a preliminary list of proposed modifications, additions, and deletions of analytical monitoring parameters and frequencies for future sampling events, and a rationale for such proposed changes, and other information as deemed necessary by EPA.

3. Petition to Cease Operation/Compliance Demonstration

When the Respondents believe that all Performance Standards have been met, the Respondents may submit a petition to cease operation of all or part of the collection system to EPA. The petition to fully or partially cease operation of the groundwater collection system shall include documentation showing that all Performance Standards have been continuously achieved for at least four quarters. Additionally, Respondents' petition shall demonstrate to the EPA that after the system is shut down:

1) there shall be no likelihood, based on best scientific judgement (as approved by EPA), that exceedances of Performance Standards will occur at or beyond the point-of-compliance; and 2) the

contaminant levels in groundwater beyond the Site perimeter no longer present a potential risk to public health and the environment. The Respondents shall perform any additional sampling and monitoring necessary to support the petition, as required by EPA, after reasonable opportunity for review and comment by the State.

The Respondents shall continue to operate the groundwater collection system until receipt of EPA approval, after reasonable opportunity for review and comment by the State, of Respondents' petition to cease operation. The Respondents shall plug and abandon wells, piezometers, or other monitoring devices as instructed by EPA within thirty (30) days of such notification by EPA. Plugging and abandonment shall be in compliance with State of Illinois regulations for such activity.

4. Post-Shutdown Monitoring

EPA, after reasonable opportunity for review and comment by the State, may approve discontinuing operation of the groundwater collection system. The Respondents shall thereafter continue to perform monitoring of groundwater (in addition to the other sampled media), in accordance with the provisions of the approved RD/RA Work Plan, in order to document the concentrations of hazardous substances, pollutants and contaminants in groundwater at or beyond the point-of-compliance following shutdown of the groundwater collection system until such time that hazardous substances, pollutants and contaminants are no longer present at the Site.

Such monitoring shall be performed utilizing samples taken from the designated monitoring wells located at or beyond the point-of-compliance.

5. Restart

If post-shutdown groundwater monitoring indicates that the concentration of any hazardous substance, pollutant or contaminant has exceeded the Performance Standards after groundwater collection has been fully or partially terminated, or that contaminant levels at or beyond the point-of-compliance are increasing such that there is a likelihood that Performance Standards will be exceeded or such that a potential threat exists, the Respondents shall notify EPA within three (3) days of Respondents' receipt of the data wherein the exceedance, potential for exceedance, or potential threat is documented, and shall partially or fully reactivate the groundwater collection system, as specified by EPA, within fifteen (15) days after receipt of the data, unless otherwise required by EPA.

The Respondents shall thereafter operate and maintain the groundwater collection system until EPA, after reasonable opportunity for review and comment by the State, determines that all Performance Standards have been met.

E. Landfill Gas Extraction and Treatment System

The Respondents shall design, construct, and operate a landfill gas collection system for the Site.

1. Landfill Gas Collection System

The following program shall be implemented, as described in the RD/RA Work Plan:

a. Landfill Gas Collection System Performance Standards

The Respondents shall design, construct, operate and maintain a landfill gas collection system. The gas collection system shall be designed to control gas pressure, prevent vertical and lateral migration and/or adversely impact the integrity of the other work components, and, if necessary, to treat landfill gases in order to eliminate atmospheric emissions, including emissions exceeding those levels specified in the substantive portions of the Illinois Administrative Code, Title 35, Subtitle B and G, and Clean Air Act Regulations and operate in compliance with all other Federal, State, and Local regulations. The gas collection and treatment system shall be designed to ensure that the landfill gases generated do not present a risk to public health or the environment.

The Respondents shall submit a Landfill Gas Evaluation Plan as part of the Predesign Work Plan. EPA, after reasonable review and comment by the State, shall disapprove/approve the submittal. This plan shall describe the activities to be conducted in the evaluation of landfill gas characteristics.

b. Air Emissions Monitoring

The Respondents shall perform air emission monitoring, as directed by the EPA-approved monitoring plan, to ensure that all Federal, State and Local regulations are met, including the substantive provisions of the Illinois Administrative Code, Title 35, and the Federal Clean Air Act, as applicable. The Respondents shall submit to EPA a monthly summary report that shall include, at a minimum, summary data tables, site maps, a discussion of the potential significance, source and impact of landfill gas detected, a delineation of impacts to the Site and its work components, a preliminary list of proposed modifications and rationale for such modifications, and other information as deemed necessary by EPA. EPA shall approve/disapprove any such proposed changes by the Respondents.

c. Additional Air Emission Remediation

If air emission monitoring indicates that the concentration of any hazardous substance, pollutant or contaminant has exceeded Federal, State, and Local regulations, lateral migration of landfill gases is present, the integrity of the landfill cap is degrading, or the

generated gases present a risk to public health and/or the environment, the Respondents shall immediately take contingent actions to remedy the problem. These additional contingent actions shall be specified in the RD/RA Work Plan and O & M Plan. The Respondents shall thereafter operate and maintain the contingent system until compliance with Performance Standards is again demonstrated pursuant to the requirements above.

F. Remedial Action Monitoring Programs

The Respondents shall implement monitoring programs approved by EPA and submit monitoring results (including results of investigations) to demonstrate compliance or noncompliance with the Performance Standards, UAO, the Record of Decision, the Scope of Work, and ARARs, and to demonstrate that protection of human health and the environment is being maintained. Monitoring results shall also be used to assist in the design, construction, implementation, operation and maintenance of the work, and to assess the need for additional work at, adjacent to, or related to the Site.

The following sampling and monitoring activities are required pursuant to the requirements of this SOW, as described above:

1. Contaminated Soil and Sediment Excavation
   a. Soil, Sediment, and Associated Material Sampling (III.B)
   b. Fill/Construction Material Sampling (II)

2. Landfill Cap Construction
   a. Fill/Construction Material Sampling (II)
   b. Surface Water Control Compliance Monitoring (III.C)

3. Groundwater Collection
   a. Performance Monitoring (III.D)
   b. Compliance Demonstration Monitoring (III.D)
   c. Post Shut-down Monitoring (III.D)

5. Landfill Gas Collection (Landfill Gas Management)
   a. Performance Monitoring (III.E)
   b. Compliance Demonstration Monitoring (III.E)

6. Multi-media Monitoring

   As required by the EPA approved RD/RA Work Plan, the Respondents shall implement a multi-media monitoring program designed to detect changes in water quality or concentrations of hazardous substances, contaminants, or pollutants in the leachate, groundwater, surface water, wetlands, sedimentation basins, soil, and sediment on or in the landfill as well as at and beyond the point-of-compliance and shall include upgradient, downgradient and transgradient monitoring. This program shall provide comprehensive information by which to assess the present and future impact of the Site on all environmental media on and around the Site.

Prior to EPA's approval of the RD/RA Work Plan, the Respondents shall implement an interim monitoring plan in accordance with provisions set forth in the approved Pre-Design Work Plan. The interim monitoring plan shall include a detailed description of routine monthly multi-media monitoring using existing monitoring points and new monitoring points installed during the Predesign Study. During the initial sampling event under the interim monitoring plan, the Respondents shall analyze for those parameters identified in the approved Predesign Work Plan or otherwise approved by EPA.

Monitoring activities shall include, but are not limited to, collection and field and laboratory analysis of samples from all monitoring points designated in the Predesign and RD/RA Work Plans as well as monitoring of the landfill cap itself. In-field analyses shall include, at a minimum, groundwater elevation, pH, temperature, and specific conductance. Laboratory analyses shall include EPA designated parameters including volatile, semivolatile, inorganic and other parameters required by EPA. All monitoring data shall be submitted by the Respondents to EPA and the State in report form.

If, at any time, levels of contaminants exceeding ARARs are found at or beyond the point-of-compliance, or Performance Standards are not being achieved at or beyond the point-of-compliance, additional work may be required. All ARARs and Performance Standards must be met before the Respondents may seek a certificate of completion of work.

7. Supplemental Sampling

In addition to the monitoring described above, Respondents shall conduct supplemental random sampling as directed by EPA, after reasonable opportunity for review and comment by the State, in written correspondence. The purpose of the supplemental sampling is to verify the satisfactory performance of the work. Situations which could trigger supplemental sampling include, but are not limited to, high precipitation events, flooding and equipment failure.

8. Integration of Monitoring Programs

To the extent practicable, the various independent monitoring programs required by this SOW should be integrated to avoid unnecessary duplication. The Respondents shall take into consideration factors such as well installation and construction, sampling and analysis procedures, and quality assurance and quality control in designing the monitoring programs, in order to assure consistency and usability of wells, sample points, samples and data for more than one monitoring program.

However, the Respondents shall remain obligated to execute each particular monitoring program independently of any other monitoring program, even if this requires duplication of effort. Such necessity may arise as the various components of the work proceed toward completion at various rates, thus requiring implementation of one monitoring program before a related program is ready to be implemented.

G. Institutional Controls

The Respondents shall implement institutional controls, as set forth in the UAO.

H. Predesign, Additional and Supplemental Investigations and Studies

Additional investigations and studies shall be performed by the Respondents to support the Woodstock Remedial Design activities, as part of the Predesign phase. The required investigations shall, at a minimum, achieve the following objectives:

- Obtain information to assist in the design, construction, implementation, operation, and maintenance of the work;

- Obtain information to identify, assess, evaluate and mitigate/minimize the adverse impacts to wetlands and other areas associated with work at the Site;

- Obtain information to assess groundwater, surface water, and other hydrologic impacts or interactions.

Upon EPA's approval of the required Predesign Work Plans for the additional investigations described below, the Respondents shall implement the additional investigations, as directed by and in accordance with the applicable approved plan and schedule.

1. Confirmatory and Supplemental Data Gathering Activities

a. Characterization and Background Sampling

The Respondents shall sample groundwater, surface and subsurface soils, sediments and surface waters to establish background concentrations, existing conditions, and Performance Standards.

b. Hydrogeological Investigation

As part of the Predesign Work Plan, the Respondents shall develop and submit to the EPA a plan to conduct a comprehensive hydrogeological study of the Site at and beyond the point-of-compliance including downgradient, upgradient and transgradient monitoring points. The purpose of the hydrogeological investigation and study is to verify and update the current

characterization of the local hydrogeological setting and associated conditions. The hydrogeological investigation shall consist of summarizing currently available information, installing additional monitoring wells, piezometers, soil borings, as well as conducting water level measurements and physical soil testing as approved by EPA, after reasonable opportunity for review and comment by the State. The results of this investigation shall be submitted in report form to EPA for review and approval and shall be incorporated into the RD/RA Work Plan.

c. Extent-of-Contamination (EOC) Investigations.

As part of the Predesign Work Plan, the Respondents shall develop and submit to EPA plans for supplemental investigations to determine the extent of contamination of groundwater, soil, sediments, and surface water at or beyond the point-of-compliance.

i. Groundwater EOC Investigation

The groundwater EOC investigation shall include installation of monitoring wells and well nests and/or other EPA approved monitoring methods, and groundwater sampling and analysis. New wells will be placed at designated depths and locations approved by EPA, after reasonable opportunity for review and comment by the State. The location and number of monitoring wells, including new wells and well nests will be specified in the Predesign Work Plan, as approved by EPA, after reasonable opportunity for review and comment by the State. All wells will be designed, installed, maintained and sampled to minimize the adverse impacts to the wetlands and prevent the possibility of cross-contamination and contaminant migration between aquifers.

As part of the groundwater EOC investigation, the Respondents shall perform in-field measurements or analyses of, at a minimum, groundwater elevation, hydraulic conductivity measurements, pH, temperature, specific conductivity, and laboratory analyses for EPA designated contaminants of concern including volatile, semivolatile, inorganic, and other parameters as required by EPA.

ii. Soil and Sediment EOC Investigation

The Respondents shall perform EOC investigations of appropriate media to determine the extent of soil, sediment, sludge, or associated materials contamination at or beyond the point-of-compliance as required in III.B of this SOW.

2. Study of the Remedy's Effects on the Environment and Program to Minimize Adverse Effects

The Respondents shall develop and implement a study which shall provide information on the potential environmental impacts which could occur during the work. As part of this study, the Respondents shall identify wetlands, biota, water bodies and other media which exist in the vicinity of the Site, and shall identify those which may be affected by any work conducted pursuant to the UAO or SOW.

As part of this study, the Respondents shall also identify potential impacts of the work and measures to minimize, mitigate and reverse any on-site and off-site environmental impacts associated with design, construction, implementation, operation and maintenance of the work. The program shall include provisions for restoring or replacing any adversely impacted wetland, biota, or other media as a result of the work. The results of the study shall be submitted by the Respondents to EPA in report form during Predesign. After reasonable opportunity for review and comment of the report by the State, EPA shall approve or disapprove the report. If EPA disapproves the report, the Respondents shall make whatever changes are required by EPA, and shall resubmit the report, including changes thereto, to EPA for approval. Upon EPA's approval of the report, the Respondents shall incorporate the results of the study into the RD/RA Work Plan and implement approved measures to minimize adverse impacts and mitigate loss due to any activities which take place in conducting the work as directed by EPA. All work shall be conducted in compliance with Federal, State or Local regulations, as applicable.

The Respondents shall coordinate the Study and mitigation program with the EPA, the State, and other Regulatory Agency.

I. Correction of Remedial Action Deficiencies/Additional Response Actions

The Respondents shall review data from the monitoring programs referred to herein for other indications which may reflect deficiencies in the work or possible violations of the UAO. The Respondents shall take into account potential deficiencies and shall array various possible corrective actions to be taken to correct a particular deficiency as part of the operation and maintenance plan.

Examples of possible deficiencies include but are not limited to:

* insufficient groundwater collection rates causing insufficient capture;
* failure to attain Performance Standards at and beyond the point-of-compliance;
* adverse hydrologic consequences (such as lowering the water table in the wetlands);
* insufficient collection of landfill gases;

* insufficient construction of landfill cap which allows ponding or causes erosion or adverse wetland impacts due to runoff.

If a monitoring program, or any other information indicates deficiencies in the work or non-compliance with the UAO, the Respondents shall report such non-compliance or deficiency to EPA within three (3) days. The Respondents shall also immediately implement the appropriate corrective action as delineated by the operation and maintenance plan or as directed by EPA.

If the exceedance, non-compliance, deficiency or violation is not covered by the operation and maintenance plan, the Respondents shall immediately propose additional response actions to EPA, in accordance with the UAO. The EPA after reasonable opportunity for review and comment by the State, will determine what additional response actions shall be performed by the Respondents.

In the case of residential drinking water wells, corrective action (such as, at a minimum, provision of alternative water supplies) shall occur immediately and no later than twenty-four (24) hours after discovery by the Respondents of site-related contamination in excess of MCLs or EPA designated compounds (i.e. prior to the taking and reporting of confirmatory samples).

J. Wetland Mitigation

The Respondents shall mitigate the loss of wetlands due to implementation of this SOW, including mitigation necessary as a result of any environmental impacts at or beyond the point-of-compliance associated with the design, construction, implementation, operation and maintenance of the work. Mitigation and/or activities which take place in the wetlands shall be conducted in compliance with all applicable or relevant and appropriate standards, directives, or requirements.

IV. Scope of Work

The work shall include the following tasks listed below. Each task shall be completed in accordance with the schedules set forth in the Compliance Schedule of this SOW, unless otherwise provided in a EPA-approved work plan schedule or other EPA-approved schedule.

A. Task I: Predesign Plans

B. Task II: RD/RA Work Plan

C. Task III: Remedial Design

1. Design Plans and Specifications

2. Operation and Maintenance Plan
3. Cost Estimate
4. Project Schedule
5. Construction Quality Assurance Objectives
6. Design Phases
7. Community Relations Support
8. Additional Studies

D. Task IV: Remedial Action Construction

1. Construction Quality Assurance Program Plan (CQA)
   a. Responsibility and Authority
   b. Construction Quality Assurance Personnel Qualifications
   c. Inspection Activities
   d. Sampling and Analysis Plan
   e. Documentation

2. Implementation of CQA
3. Health & Safety Plan

E. Task V: Reports and Submissions

1. Monthly Progress Reports
2. Notification of Completion of Remedial Construction
3. Draft Reports and Submittals
4. Final Reports and Submittals
5. Draft and Final Completion of Final Remedial Action Reports
6. Progress Reports during O & M
7. Notification of Failure to Meet Performance Standards and Submission of Supplemental Work Plan
8. Annual Reports

A. Task I: Predesign Work Plans

The Respondents shall prepare and submit to EPA for review and approval Predesign Work Plans which shall describe the overall management strategy for performing all required Predesign Work and shall be in accordance with the schedule set forth below in Section V. The Predesign Work Plans shall document the responsibility and authority of all organizations and key personnel involved with the implementation of the Predesign Work required under the UAO and this SOW. The Predesign Work Plans shall also include a description of qualifications of key personnel directing the Predesign Work, including contractor personnel. The Respondents shall submit final Predesign Work Plans incorporating EPA's comments on the Draft Predesign Work Plans according to the schedule identified in Section V.

The Predesign Work Plans shall include plans for:

1. Site Characterization and Sampling and Analysis (including determination of background concentrations and

contaminated soil, sediment and associated material sampling and analysis);
2. Hydrogeological Investigation
3. EOC investigations and Technical Memoranda (including operating parameters for the groundwater remediation system);
4. Cap Predesign Study (including surface water control system and vegetative cover);
5. Landfill Gas Evaluation Plan;
6. Fence and warning sign installation;
7. Monitoring;
8. Predesign Quality Assurance Project Plan, Predesign Sampling and Analysis Plan, and Health and Safety Plan for all Predesign Work activities, including air, groundwater, soil, sediment, and surface water monitoring, sampling and analysis;
9. Identification and delineation of sensitive environments (including, but not limited to wetlands) and a study of the work impacts on the environment; and
10. Mitigation of the remedy's environmental effects during Predesign Work.

The Respondents shall report the results of the Predesign Work in the Predesign Report, and shall submit the results as required by the applicable Predesign Work Plan Schedule.

B. Task II: RD/RA Work Plan

The Respondents shall prepare and submit to EPA for review and approval a RD/RA Work Plan which shall document the overall management strategy for performing the design, construction, operation, maintenance and monitoring of the work. The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation of the work required under the UAO and this SOW. The RD/RA Work Plan shall also include a description of qualifications of key personnel conducting the RD/RA, including contractor personnel. A Sampling and Analysis Plan and Quality Assurance Project Plan (QAPP) shall also be a part of the RD/RA Work Plan and shall be prepared and submitted by the Respondents for EPA review and approval. The Sampling and Analysis Plan (SAP) and QAPP shall ensure that sample collection and analytical activities are conducted in accordance with EPA protocols and procedures and that the data meet Data Quality Objectives and the requirements of the EPA Contract Lab Program (CLP) for laboratories proposed outside the CLP. The SAP shall include, at a minimum, sampling objectives, locations, and frequency, sampling equipment and procedures, and sampling handling and analysis. The QAPP shall be submitted in accordance with EPA Region V QAPP guidance documents which delineate the content and requirements for submittal. A pre-QAPP meeting shall be held with EPA prior to development of the QAPP, at which time the Respondents shall be provided with the current and applicable QAPP guidance and shall meet with the USEPA Quality Assurance Section to discuss

Region V QAPP requirements. The requirements for the RD/RA SAP and QAPP shall also pertain to the Predesign SAP and QAPP.

The Respondents shall submit a final RD/RA Work Plan incorporating EPA's comments on the Draft RD/RA Work Plan according to the schedule identified in the Section V. The RD/RA Work Plan shall include, at a minimum, the following activities and plans:

A. Work plan for the excavation and consolidation of contaminated soil and sediment (including contingency plan);
B. Work plan for the design and construction of the landfill cap and surface water control system;
C. Work plan for the design and construction of a groundwater collection system;
D. Work plan for the design and construction of a landfill gas collection (landfill gas management) system (including contingency plan);
E. Work plan for the investigation, sampling and analysis of material to be used for fill, backfilling, and landfill cap;
F. An RD/RA Monitoring Plan for all air, groundwater, soil, sediment, and surface water monitoring, sampling and analysis activities required by this SOW (other than those required by the Predesign Work Plan);
G. A RD/RA Health and Safety Plan;
H. A RD/RA SAP and QAPP; and
I. A work plan for the program for the mitigation of environmental effects during remedial activities.

C. Task III: Remedial Design

1. Design Plans and Specifications

The Respondents shall prepare and submit to EPA for review and approval construction plans and specifications to implement the required work at the Site. Submittal of plans and specifications shall be in accordance with Section V. The Respondents shall develop clear and comprehensive design plans and specifications which include, at a minimum:

a. Discussion of the design strategy and the design basis, including:

   i. Compliance with all applicable or relevant and appropriate requirements; and

   ii. Minimization of environmental and public impacts.

b. Discussion of the technical factors of importance including:

i. Use of currently accepted environmental control measures and technology;

ii. The constructability of the design; and

iii. Use of currently acceptable construction practices and techniques.

c. Description of assumptions made and detailed justification of these assumptions;

d. Discussion of the possible sources of error and references to possible operation and maintenance problems;

e. Detailed drawings of the proposed design including:

i. Qualitative flow sheets; and

ii. Quantitative flow sheets.

f. Tables listing equipment and specifications;

g. Tables giving material and energy balances;

h. Appendices including:

i. Sample calculations (one example presented and explained clearly for significant or unique design calculations);

ii. Derivation of equations essential to understanding of the report; and

iii. results of laboratory and field tests

2. Operation and Maintenance Plan

The Respondents shall prepare and submit to EPA for review and approval an Operation and Maintenance Plan to cover both implementation and long term operation and maintenance of the work. A Draft Operation and Maintenance Plan shall be submitted simultaneously with the Prefinal Design Document submission and the Final Operation and Maintenance Plan with the Final Design documents. The plan shall include the following elements:

a. Description of normal operation and maintenance (O&M):

i. Description of tasks for operation;

ii. Description of tasks for maintenance;

iii. Description of prescribed treatment or operation conditions; and

iv. Schedule showing frequency of each O&M task.

b. Description of potential operating problems:

i. Description and analysis of potential operation problems;

ii. Sources of information regarding problems; and

iii. Common and anticipated remedies.

c. Description of routine monitoring and laboratory testing:

i. Description of monitoring tasks;

ii. Description of required laboratory tasks and their interpretation;

iii. Required data collection; and

iv. Schedule of monitoring frequency.

d. Description of alternate O&M:

i. Should system or any component of the system fail, corrective actions to be taken by the Respondents; and

ii. Analysis of vulnerability and additional resource requirements should a failure occur.

e. Corrective Action:

i. Description of corrective action to be implemented in the event that Performance Standards are not met; and

ii. Schedule for implementing these corrective actions.

f. Safety Plan:

i. Description of precautions, of necessary equipment, etc., for site personnel; and

ii. Safety tasks required in event of systems failure.

g. Description of equipment:

i. Equipment identification;

ii. Installation of monitoring components;

iii. Maintenance of site equipment; and

iv. Replacement schedule for equipment and installed components.

h. Records and reporting mechanisms required:

i. Daily operating logs;

ii. Laboratory records;

iii. Records for operating costs;

iv. Mechanism for reporting emergencies;

v. Personnel and maintenance records; and

vi. Monthly/annual reports to EPA and the State agencies

vii. Submission of O & M sampling data; and

viii. Notification of Failure to meet Performance Standards and submission of Supplemental Work plan.

3. Cost Estimate

The Respondents shall refine the cost estimate developed in the FS for the Site to reflect the more detailed design plans and specifications developed pursuant to this SOW. The cost estimate shall include both capital and operation and maintenance costs. An Initial Cost Estimate shall be submitted to EPA simultaneously with the Prefinal Design submission and the Final Cost Estimate with the Final Design Document.

4. Project Schedule

The Respondents shall develop a project schedule which identifies timing for initiation and completion of all critical path tasks for design, construction and implementation of the work. The Respondents shall specifically identify dates for completion of the project and major interim milestones. The project schedule shall also be consistent with the schedule of submissions as set forth in Section V of the SOW. A draft project schedule shall be submitted simultaneously with the Prefinal Design Document submission and the Final Project Schedule with the Final Design Document.

5. Construction Quality Assurance Objectives

The Respondents shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements and documentation.

6. Design Phases

The Respondents shall meet regularly with EPA and the State to discuss design issues. The design of the Work shall include the phases outlined below.

a. Preliminary design

The Respondents shall submit to EPA in accordance with the schedule in Section V a preliminary design which shall reflect approximately 30% completion of the design effort. At this stage, the Respondents shall have field verified the existing conditions at the Site. The preliminary design shall reflect a level of effort such that the technical requirements of the project have been addressed and outlined so that they may be reviewed to determine if the final design will result in compliance with the Performance Standards and the work as delineated in the SOW and UAO. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program.

The preliminary construction drawings by the Respondents shall reflect organization and clarity. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Respondents shall include with their preliminary submission, design calculations reflecting the same percentage of completion as the design they support.

b. Intermediate design

The Respondents shall submit to EPA in accordance with the schedule in Section V an intermediate design which shall reflect 60% completion of the project. The intermediate design submittal shall include the following sections:

- Project Design Drawings

- Preliminary technical specifications

The detailed plans shall be 60% completed at this point.

The Respondents shall assure, at a minimum, general correlation between drawings and technical specifications before submitting the project specifications. The Respondents shall:

i. Coordinate and cross-check the specifications and drawings; and

ii. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

The Respondents shall prepare and include in the technical specifications which govern the operating systems the following: (1) contractor requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems; and (2) training materials which explain the appropriate operational procedures to be used once the start-up has been successfully accomplished.

c. Prefinal Design

The Respondents shall submit to EPA the Prefinal Design according to the schedule in the Section V. The design shall be 95% complete upon submission of the prefinal design submission.

The prefinal design submittal shall consist of the Construction Design Plans and Specifications, Operation and Maintenance Plan, Capital and Operating and Maintenance Cost Estimate, Project Schedule, and Construction Quality Assurance Objectives.

d. Final Design

After approval of the prefinal submission, the Respondents shall execute the required revisions and submit the final design (100% completion) with reproducible drawings and specifications.

The Respondents shall submit the Final Design according to the schedule in Section V. The Final Design consists of the Final Construction Design Plans and Specifications (100% complete), the Respondents' Final Construction Cost Estimate, the Final Operation and Maintenance Plan, the Final Construction Quality Assurance Objectives and the Final Project Schedule. The quality of the design documents shall be such that they will be ready, as submitted, for bid advertisement.

7. Community Relations Support

A community relations program will be implemented by EPA. The Respondents shall cooperate with the EPA and IEPA by participating in the preparation of all appropriate information disseminated to the public and in public meetings that may be held or sponsored by the EPA or the IEPA to explain activities at or concerning the Site.

Community relations support shall be consistent with Superfund community relations policy as stated in the "Guidance for Implementing the Superfund Program" and "Community Relations in Superfund - A Handbook".

8. Additional Studies

The EPA, after reasonable opportunity for review and comment by the State, may require the Respondents to perform additional studies to supplement the available technical data or as otherwise needed. The Respondents shall furnish all equipment, personnel and funding necessary to complete any additional studies needed.

D. TASK IV: REMEDIAL ACTION CONSTRUCTION

1. Construction Quality Assurance Program Plan

The Respondents shall submit a draft Construction Quality Assurance Program (CQA) Plan concurrently with submission of the Prefinal Design (See Section V). The Respondents shall finalize the CQA Plan incorporating any modifications necessary to address EPA's comments on the draft Construction Quality Assurance Plan.

The CQA Plan shall assure that the completed work will meet or exceed all design criteria, plans and specifications. The CQA Plan is a site specific document which must be approved by EPA prior to the start of the construction. At a minimum, the CQA Plan should include the elements which are summarized below.

a. Responsibility and Authority

The Respondents shall describe fully in the CQA Plan the responsibility and authority of all organizations (i.e., technical consultants, construction firms, etc.) and key personnel involved in the construction of the work. The Respondents shall also identify a CQA officer and the necessary supporting inspection staff.

b. Construction Quality Assurance Personnel Qualifications

The Respondents shall set forth the qualifications of the CQA Officer and supporting inspection personnel in the CQA Plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

c. Inspection Activities

The Respondents shall summarize in the CQA Plan the observations and tests that will be used to monitor the construction and/or installation of the components of the work. The plan shall describe the scope, frequency and documentation used to record the results of each type of inspection. Inspections shall verify and document compliance with environmental requirements and include, but not be limited to air quality and emissions monitoring records, waste disposal records, etc. The inspection shall also ensure compliance with all health and safety procedures. In addition to the oversight inspections, the Respondents shall conduct the following activities:

i. Preconstruction inspection and meeting

The Respondents shall conduct a preconstruction inspection and meeting with EPA and the State to:

* Review methods for documenting and reporting inspection data;
* Review methods for distributing and storing documents and reports;
* Review Work area security and safety protocol;
* Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and

* Conduct a site walk-around to verify that the design criteria, plans and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person provided by the Respondents and minutes shall be transmitted to all Parties.

ii. Prefinal Inspection

Upon preliminary project construction completion, the Respondents shall notify EPA and the State for the purposes of conducting a prefinal inspection. The prefinal inspection shall consist of a walk-through inspection of the entire project site with the EPA. The inspection will be conducted to determine whether the project construction is complete and consistent with the contract documents and the EPA approved work. Any outstanding construction items discovered during the prefinal inspection shall be identified and noted. Additionally, all operating systems and equipment shall be operationally tested by the Respondents.

The Respondents shall certify that the work components will perform as designed and that all specifications have been met. The Respondents shall correct deficiencies noted during the prefinal inspection and shall initiate and complete retesting, as directed by EPA. The Respondents shall submit a Prefinal Inspection Report to U.S EPA for approval within thirty (30) days of the prefinal inspection, outlining the outstanding construction items, actions required to resolve such items, the completion date for these items and the date for the final inspection. Such final inspection date shall be no later than thirty (30) days after the submission of the Prefinal Inspection Report.

iii. Final Inspection

Upon completion of all outstanding construction items, prior to the date set for the final inspection, the Respondents shall notify EPA and the State for the purposes of conducting the final inspection. The final inspection shall consist of a walk-through inspection of the project site with EPA and the State. The EPA approved Prefinal Inspection Report will be used as a checklist for the final inspection. The final inspection shall focus on the outstanding construction items identified in the prefinal inspection. At the time of the final inspection, the Respondents shall certify that all outstanding items have been resolved.

d. Sampling and Analysis Plan

The Respondents shall prepare a plan to document all monitoring procedures including, but not limited to, sampling, field

measurements and analysis performed during the Remedial Action. The plan shall contain the following elements:

i. Data Collection Strategy

The data collection strategy shall be delineated in the RD/RA QAPP and SAP and shall include, at a minimum, a description of the intended uses for the data; the necessary level of precision and accuracy for these intended uses; a description of the methods and procedures used to assess the precision, accuracy and completeness of the measurement data; a description of the measures to be taken to assure that data sets may be compared to each other, including sets generated by the Respondents, laboratories, or consultants; details relating to the schedule and information to be provided in quality assurance reports.

ii. Sampling Procedures

The sampling procedures shall document field sampling operations and procedures including all field measurements and analysis to be conducted and shall be in accordance with EPA guidance for SAP and QAPP preparation, subject to EPA review and approval.

e. Documentation

The Respondents shall describe in detail in the CQA Plan the reporting requirements for CQA activities. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports and final documentation. Provisions for the final storage of all records shall be presented in the CQA Plan.

2. Implementation of CQA Plan

The Respondents shall construct and implement the work in accordance with the approved design, schedule and CQA Plan.

3. Health & Safety Plan

The Respondents shall prepare a Health & Safety Plan to document procedures to be followed during the construction of the remedy to ensure the safety of the workers and any visitors or inspectors who may arrive at the Site.

E. TASK V: Reports and Submissions

The Respondents shall prepare and submit to EPA plans, specifications and reports as set forth in Task I through Task V to document the design, construction, operation, maintenance and monitoring of the work. Documentation shall include, but not be limited to the following:

1. Progress Reports

The Respondents shall at a minimum provide to the EPA and the State signed monthly progress reports during the predesign, design, and construction phases and monthly progress reports for operation and maintenance activities containing, at a minimum, the following:

a. A description of the actions which have been taken toward achieving compliance with the UAO during the previous month;

b. A summary of all results of sampling and tests and all other data received or generated by the Respondents or their contractors or agents in the previous month;

c. Identification of all work plans, plans, and other deliverables required by the UAO or this SOW that were completed and submitted during the previous month;

d. A description of all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next month and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and Pert charts;

e. Information regarding percentage of completion, unresolved delays and/or problems encountered or anticipated that may affect the future schedule for implementation of the work, and a description of efforts made to mitigate those delays or anticipated delays;

f. Any modifications to the work plans, the work, or other schedules that are part of the work, or those modifications that have been approved or unapproved by EPA;

g. Changes in personnel during the reporting period;

h. A description of all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next month, as well as all contacts with representatives of the local community, public interest groups, or local or state governments; and

i. Copies of daily reports, inspection reports, laboratory/ monitoring data, etc.

Progress reports shall be provided by the Respondents until such time as EPA issues notice to the Respondents that such reports are no longer required.

2. Notification of Completion of Remedial Construction

The Respondents shall provide written notice to EPA within fifteen days after completion of remedial construction and final inspection approval by EPA.

3. Draft Reports and Submittals

a. The Respondents shall submit draft Predesign and RD/RA Work Plans outlined in Tasks I and II in accordance with the schedule contained in Section V;

b. The Respondents shall submit draft Construction Plans and Specifications, Design Reports, Cost Estimates, Schedules, Operation and Maintenance Plans and Predesign Reports as outlined in this SOW and in accordance with the schedule in Section V;

c. The Respondents shall submit a draft Construction Quality Assurance Program Plan and Documentation as outlined in Task IV and in accordance with the schedule in Section V;

d. Within thirty (30) days of the final inspection, the Respondents shall submit a draft Remedial Action Construction Completion Report to the EPA and the State. The report shall document that the work, as constructed, is consistent with the design specifications, and that the work will perform adequately. The Report shall include, but not be limited to the following elements:

i. Synopsis of the work;

ii. Certification (by a registered professional engineer) of the design and construction;

iii. Explanation of any approved or unapproved modifications to the plans and why these were necessary for the project;

iv. Listing of all Performance Standards established for judging the functioning of the work components;

v. Results of all pilot tests, field tests, studies and site monitoring, and certification that the work will meet or exceed the Performance Standards; and

vi. Explanation of the operation and maintenance (including monitoring) to be undertaken at the Site.

4. Final Reports and Submittals

The Respondents shall prepare and submit to EPA final RD/RA Work Plans, Design Reports, Construction Plans and Specifications, Cost Estimates. Project Schedules, Operation and Maintenance Plan, Predesign Reports, Construction Quality Assurance Program Plan/Documentation and the Remedial Action Construction

Completion Report, incorporating any modifications needed to address EPA's comments received on draft submissions. The Respondents shall implement all EPA-approved submittals as modified and approved by EPA.

5. Draft and Final Completion of Final Remedial Action Reports

a. Draft Completion of Remedial Action Report

Within thirty (30) days after Respondents conclude: (1) that the Performance Standards have been attained; (2) all operation and maintenance activities are complete; and (3) that institutional controls are no longer necessary to protect the integrity of the remedial action, human health or the environment, Respondents shall submit a Draft Completion of Remedial Action Report, which shall document the completion of all work required by this SOW and the UAO to which it is appended. The Draft Report shall document the bases for Respondents' conclusions. The Respondents shall conduct any additional activities needed to complete the work, as directed by EPA.

b. Final Completion of Remedial Action Report

The Respondents shall incorporate EPA comments and modifications to the Draft Completion of Remedial Action Report, and shall perform all required additional activities as directed by EPA. Upon completion of these additional activities and as directed by EPA, the Respondents shall submit a Final Completion of Remedial Action Report, which shall document that the final remedy for the Site has been fully completed.

6. Progress Reports during O & M

Progress reports shall be submitted by the Respondents in accordance with the requirements delineated in Sections IV and V of this SOW.

7. Notification of Failure to Meet Performance Standards and Submission of Supplemental Work Plan

Notification of failure to meet Performance Standards and submission of a supplemental work plan by the Respondents shall be in accordance with Section III of this SOW.

8. Annual Report

The Respondents shall submit each year, within thirty days of the anniversary of the effective date of the UAO, a report to the Parties setting forth the status of response actions at the Site, which shall include at a minimum a statement of tasks remaining to be accomplished, and the schedule for implementation of the remaining work.

V. Submission Schedule

The Respondents shall comply with the schedule presented below:

Submission	Due Date
Predesign Phase (Task I)	
Draft Predesign Work Plans	45 days after authorization to proceed
Final Predesign Work Plans	30 days after EPA comments on draft Predesign Work Plans
Draft Predesign Report	As required in the schedule set forth in the Predesign Work Plans approved by EPA
Final Predesign Report	30 days after EPA comments on Draft Predesign Report
Draft RD/RA Work Plan	45 days after EPA approves Final Predesign Report
Final RD/RA Work Plan	30 days after EPA comments on draft RD/RA Work Plan
Design Phases (Task II)	
Preliminary Design the (30% completion)	60 days after EPA approval of the Final RD/RA Work Plan
Intermediate Design (60% completion)	60 days after EPA comments on the Preliminary Design
Prefinal Design (95% completion)	60 days after EPA comments on the Intermediate Design
Final Design (100% completion)	30 days after EPA approval of the Prefinal Design
Draft Submittals	Concurrent with Prefinal Design
Construction Designs and Specifications Design Reports Cost Estimates Project Schedule Operation and Maintenance Plan	
Final Submittals	Concurrent with Final Design

Construction Designs and Specifications
Design Reports
Cost Estimates
Project Schedules
Operation and Maintenance Plan

Draft Construction Quality Assurance Plan (Task III)	Concurrent with the Prefinal Design
Final Construction Quality Assurance Plan (Task III)	Concurrent with the Final Design
Initiate Remedial Action (Task IV)	Within 30 days after approval of all design documents
Preconstruction Inspection and Meeting (minutes and notes)	Within 30 days of the meeting
Implementation of Remedial Action	In accordance with schedule approved by EPA
Prefinal Inspection Report	30 days after Prefinal Inspection

Notification of Completion of Remedial Construction	Within 15 days of completion of construction and final inspection
Draft Remedial Action Completion of Construction Report	30 days after final inspection
Final Remedial Action Completion of Construction Report	Within 30 days of comment on Draft Report
Draft Completion of Remedial Action Report	After attainment of Performance Standards
Final Completion of Remedial Action Report	As directed by EPA
Progress Reports for Tasks I through IV	Monthly
Progress Reports during Operation and Maintenance	Monthly/Annual
Annual Report	Annual

APPENDIX II
RESPONSIVENESS SUMMARY
WOODSTOCK MUNICIPAL LANDFILL SUPERFUND SITE
WOODSTOCK, ILLINOIS

OVERVIEW

In accordance with CERCLA Section 117, 42 U.S.C. Section 9617, the United States Environmental Protection (USEPA) held a public comment period from April 9, 1993 to June 9, 1993 to allow interested parties the opportunity to comment on the Remedial Investigation (RI), Baseline Risk Assessment (BLRA), Feasibility Study (FS), and the Proposed Plan for the Woodstock Municipal Landfill (the "Site"). USEPA presented the Proposed Plan to the public at an April 28, 1993 public meeting held at the Woodstock Public Library. At this meeting, the RI, FS, and Proposed Plan were summarized, questions answered, and comments were accepted from the public.

The purpose of this responsiveness summary is to document comments received during the public comment period and USEPA's responses to these comments. All comments received by the USEPA were reviewed. Those comments are grouped and summarized in this document and were considered prior to USEPA's final decision for remedial action at the site. Comments received that were outside the scope of this responsiveness summary are not addressed.

An Administrative Record has been compiled upon which the selection of the remedy is based with an index as Appendix I.

The responsiveness summary is presented in the following sections:

SECTION A. BACKGROUND ON COMMUNITY INVOLVEMENT
SECTION B. SUMMARY OF COMMENTS FROM THE LOCAL COMMUNITY
- 1.0 TECHNICAL ISSUES
  - 1.1 NATURE AND EXTENT OF CONTAMINATION
  - 1.2 COVER ISSUES
  - 1.3 GROUNDWATER EXTRACTION
  - 1.4 ECOLOGICAL ISSUES
  - 1.5 EXPOSURE AND RISK ASSESSMENT
  - 1.6 COMPARISON TO OTHER SITES
  - 1.7 EQUIVALENT PERFORMANCE OF OTHER ALTERNATIVES
- 2.0 PERMANENCE OF REMEDY AND EFFECTIVENESS
- 3.0 SUPERFUND PROCESS
  - 3.1 SUPERFUND PROCESS - GENERAL QUESTIONS
  - 3.2 SUPERFUND PROCESS - PRP AND ENFORCEMENT ISSUES
  - 3.3 COMMUNITY ACCEPTANCE/INSTITUTIONAL CONTROLS
- 4.0 LANDFILL REGULATIONS/STATE RESPONSIBILITY
- 5.0 MISCELLANEOUS COMMENTS

SECTION C. SUMMARY OF COMMENTS FROM THE POTENTIALLY RESPONSIBLE PARTIES

A. BACKGROUND ON COMMUNITY INVOLVEMENT

Since this site was listed on the National Priorities List (NPL) in October 1989, community concern and involvement have remained strong. There has been considerable congressional and media attention on the site for the past several years and more recently since the proposed plan has been issued. The McHenry County Defenders have also been extremely active in enhancing community awareness.

Judging from the comments received during the public comment period, one faction in the community strongly opposes the recommended alternative and another faction strongly supports USEPA's preferred remedial choice. The City of Woodstock, who is a potentially responsible party for the site, opposes USEPA's recommended alternative because they believe it is overprotective and too costly. The PRPs prefer Alternative 4 which, in general, included reconstruction of the existing cap. Many residents of Woodstock agree with the PRPs expressed concerns. A community group, the McHenry County Defenders, advocated a similar remedy to USEPA's preferred alternative that also involved a geosynthetic cap, but differs in that they prefer bioremediation of the contaminated groundwater instead of extraction through a pump and treat technology. They also supported placement of a "natural prairie" type vegetative cover.

B. SUMMARY OF COMMENTS FROM THE LOCAL COMMUNITY

This section summarizes both written comments received by USEPA during the public comment period and verbal comments from the public meeting on April 28, 1993. Most of the written comment letters received by USEPA during the public comment period contained multiple comments on different issues. In many cases an essentially similar comment was made by several different commentors. In order to focus the response, similar comments were grouped together or were paraphrased, if this could be done without changing the intent or meaning of a specific comment received by USEPA.

1.0 TECHNICAL ISSUES

1.1 NATURE AND EXTENT OF CONTAMINATION

Comment 1: What are the concentrations of vinyl chloride in the ground water adjacent to the landfill and what kind of levels of vinyl chloride did you find in the control wells that are not ordinarily contaminated? What is the maximum allowable limit of vinyl chloride in groundwater? What is the source of the vinyl chloride?

Response: The average vinyl chloride concentration detected in the monitoring wells that were contaminated, MW4D and MW8, was approximately 20 parts per billion (ppb). Vinyl chloride was not detected in any of the control wells (referred to as background wells). In accordance with Illinois Groundwater Quality Standards in 35 Illinois Administrative Code Section

620.410, the maximum allowable limit of vinyl chloride in groundwater is 2 ppb. The source of the vinyl chloride is the landfill. A specific area or specific source within the landfill was not identified, but the contaminated groundwater plume extends downgradient from the south edge of the landfill.

Comment 2: How large is the vinyl chloride plume in terms of area and how many gallons of water have to be treated through the pump and treat extraction process?

Response: The vinyl chloride plume was estimated in the RI to have an area of approximately 220,000 square feet. The volume of groundwater containing vinyl chloride was therefore estimated to be 6.6 million gallons. While it would be possible to remove 6.6 million gallons of water from the aquifer in 92 days by pumping at 50 gpm, this amount of pumping would not result in lowering the levels of vinyl chloride to 2 ppb, the maximum allowable level due to factors such as adsorption of the vinyl chloride to the aquifer materials. Several pumping events would be necessary to lower the vinyl chloride concentration to this concentration. At this time, the number of required pumping events is not known, therefore an accurate amount of gallons of groundwater necessary to be removed cannot be determined. It was estimated in the RI that between 52 and 130 million gallons of groundwater may be removed before the groundwater is cleaned up to the 2 ppb level.

Comment 3: If the vinyl chloride is a final product of the degradation, isn't it going to go away by itself shortly?

Response: In the FS it was estimated that it would take 40 to 70 years for groundwater contamination in the vinyl chloride area to reach groundwater standards through advective flushing and other natural processes, assuming no further vinyl chloride migrates from the landfill.

Comment 4: Have any dense non-aqueous phase liquids been found? Have you sampled all the way down to the base of the aquifer?

Response: No dense non-aqueous phase liquids were found during the RI at the site. A number of the ground-water monitoring wells, located both upgradient and downgradient of the landfill, are monitored such that they extend to the base of the upper aquifer and slightly into the underlying clay till.

Comment 5: Are there any current or existing unacceptable human risks found in the groundwater around the landfill? Have you done any testing? When was the last time that testing was done?

Response: No existing unacceptable human health risks have been identified for groundwater around the landfill. Sampling of select residential wells was last conducted during July 1990. In addition, it is important to note that Superfund regulations, as found in Section 300.430 Volume 40 of the Code of Federal Regulations, require that USEPA characterize potential threats to human health and the environment, as well as existing threats. Shallow offsite groundwater downgradient of the landfill was determined to pose an unacceptable potential human health risk, due to the presence of vinyl chloride.

1.2 COVER ISSUES

Comment 6: Why is there a difference in the amount of wetlands that would be filled in between the clay cap and the geosynthetic cap? How much would that difference be?

Response: At the landfill cover perimeter the existing refuse side slopes will be regraded to approximately a 4 to 1 slope (i.e. 4 ft of horizontal distance for each 1 ft of vertical drop) in order to accommodate an up-graded cover. Thicker cover materials will require that side slopes extend further out from the landfill to maintain the same slope.

In the FS, it was estimated that 1 to 2 acres of wetlands would be lost and would have to be replaced if a cap as specified in Alternatives 8, 9, 10, or 11 was selected. The cap as proposed in Alternative 7, the USEPA's selected remedy, was also evaluated in the FS by the PRP's consultant and it was determined that no wetland loss would occur with this type of cap.

Comment 7: Why is a cap necessary if the waste has been there almost 20 years, if no contamination has been released, and if contaminants aren't in the Kishwaukee River yet.

Response: It was documented during the RI that the landfill is impacting the groundwater, surface water and sediments and that the primary source of these impacts comes from the leachate which is emanating from the landfill.

During the RI, the current landfill cover was examined in several areas and was found to be inconsistent in thickness and types of materials. Although the RI workplan called for

a phased investigation of the existing cover, based on that initial investigation it was determined that the existing cover was inadequate and that a more detailed investigation was not warranted. The existing cover is degraded allowing precipitation to flow through the waste to generate leachate, and is eroded to the point where refuse is exposed at the surface. In addition, the current cap is poorly graded and rainwater forms small ponds in several areas on the landfill which directly drain into the landfill forming leachate.

The purpose of capping the landfill is to limit infiltration and thus leachate generation, and prevent further releases from the landfill to groundwater, surface water, and air. A cap would also reduce the potential for direct contact with the waste and prevent further degradation of the wetlands surrounding the site.

Comment 8: What is the nature of the synthetic membrane? Is it high density polyethylene?

Response: The membrane which will be part of the new cap will likely be a polyethylene barrier. The density would be subject to USEPA and IEPA approval depending on the other components included in the cover. Final approval of all cap components will occur during the remedial design stage.

Comment 9: How thick is the membrane and how will it be seamed? My concern is not so much the membrane itself, but where it's seamed, because heat may volatilize the components of the plastic and their loss lead to cracks in the membrane.

Response: A high or low density polyethylene membrane would a minimum of 20 mils (20 thousandths of an inch) thick. If seaming is done by extrusion welding then a minimum of 30 mils would be required.

Since the temperatures used during welding the seam would be in the same range as those used in the original membrane manufacturing process, heat extrusion welding should not change the chemical or physical nature of the polyethylene. USEPA would require that seam welds be systematically tested during construction of the barrier layer at the landfill. A seam weld would only be acceptable if the membrane adjacent to the seam weld tears before the seam itself. In other words, as a result of the extrusion welding process the seam that is welded would become stronger than the other parts of the membrane.

Comment 10: EPA argues that Alternative 4 was the essentially the same cap that was placed on the landfill when it closed, and has since failed. Didn't USEPA overlook the fact that the old cover was not really "engineered" as it would be under Alternatives 4 and 5? Can't we assume that this time around the city would try harder to make the cap a little better and that they would design it better than it was?

Response: Yes, USEPA agrees that the Alternative 4 cap would likely be better engineered than the cap that was placed over the landfill when it was closed. Regardless of the cover system selected, the cap will have specific design requirements, quality assurance/quality control requirements during construction, and subsequent monitoring, maintenance and inspection requirements that were likely not present for the cap installed when the landfill was closed. However, the cap in Alternatives 4 and 5 would not provide for overall protection of human health and the environment due to its inability to prevent further releases to the environment. The cap proposed in these alternatives would, as stated in the FS, consist of suitable fill. As is evident now, this cap (the "807" type cap as specified in Illinois regulations) failed to prevent releases from the landfill to the environment, and does not have a sufficient amount of soil cover to protect the low permeability layer beneath it or sustain vegetation above it. In addition, this type of cap is no longer permitted to be constructed by the State of Illinois. The regulations now require the type of cap specified in Alternative 7.

Comment 11: Wouldn't the Alternative 4 clay cover be better than Alternative #7 geosynthetic cap, which has had very limited experience and might crack in the future?

Response: Information and performance data to date has indicated that the membrane as specified in the remedy is not impacted by frost or desiccation, and can stretch significantly without failure in response to differential settlement of a landfill's contents. A two-foot clay cover with six inches of topsoil is more likely to crack due to freeze/thaw cycles, desiccation and differential settlement.

There is sufficient experience with membranes as there have been more than 10,000 installations of polyethylene membranes around the world in the past decade.

Available test data for determining the life of HDPE indicates the membrane may stay intact for 20 to 2000 years. If the membranes are installed correctly, test data indicates the membrane may outlive the long-term care periods of 30 years.

Comment 12: If suitable fill in Alternative 4 were understood by you to include two feet of $1x10^{-7}$ cm/sec clay over recontoured landfill, would you then feel that would be acceptable?

Response: No. Superfund regulations, as found in Section 300.430(f)(i)(A) of Volume 40 of the Code of Federal Regulations, require that the remedy chosen be in compliance with applicable or relevant and appropriate State and Federal regulations (ARARs), unless an ARAR is waived. A low permeability layer comprised of 2 feet of $1x10^{-7}$ cm/sec clay would not be acceptable because it would not meet the ARAR specified for the landfill cap, 35 IAC 811.314. 35 IAC 811.314 requires that the low permeability layer be at least equivalent to 3 feet of compacted earth with a permeability of no more than $1x10^{-7}$ cm/sec, in combination with 3 feet of additional protective cover soil.

Comment 13: If we could convince you legally the only requirement was 35 IAC 807, would USEPA still want three feet of $1x10^{-7}$ cm/sec compacted earth?

Response: If 35 IAC 807 were the ARAR, then the USEPA and IEPA would not require a low permeability layer that is equivalent to 3 feet of $1x10^{-7}$ clay. It is important to note that one reason the 35 IAC 807 regulation was replaced by the 35 IAC 811.314 regulation in Illinois is because past experience with "807 covers" indicated that they did not function adequately (i.e. did not prevent releases to the environment).

1.3 GROUNDWATER EXTRACTION

Comment 14: What is the cost estimate for groundwater extraction and treatment, and what percentage is that of the total cost of the Alternative 7 proposed remedial plan?

Response: Based on the cost estimates in the FS, the groundwater pump-and-treat system capital costs would be $442,000 or about 6 percent of the capital costs. The operation and maintenance portion for the pump-and-treat system is 46 percent or approximately $60,000 per year.

Comment 15: If your cap stops water from coming in contact with whatever is in this dump, aren't you going to greatly reduce the degradation of what is in that dump, and wouldn't a much longer time be required for groundwater extraction and treatment, instead of the three to five years estimated in the FS?

Response: The purpose of the groundwater extraction and treatment program is to remediate vinyl chloride groundwater contamination which is located downgradient of the landfill. Because vinyl chloride was not identified in the landfill leachate or landfill gas, it is currently believed that it is either a degradational product of something released from the landfill in the past, or is a primary contaminant that was released from the landfill in the past and is no longer being released. Note also that no potential parent products for the vinyl chloride, other than traces of 1,2 dichloroethene were identified in groundwater or leachate. Therefore it is assumed that the vinyl chloride contamination can be cleaned up by remediating only the downgradient plume. The improved landfill cap will serve to minimize leachate formation in the landfill and help to ensure that future releases do not occur.

Comment 16: Groundwater is moving laterally through the waste materials. Shouldn't groundwater contamination continue to occur? What is the two to five year groundwater pump and treat estimate based upon?

Response: The two to five year groundwater pump and treat estimate is based upon the assumption that vinyl chloride, or parent compounds that degrade to form vinyl chloride, are not currently being released from the landfill. Consequently it is believed that the plume can be cleaned up if there is no external source feeding it. These assumptions are based on the fact that no vinyl chloride was detected in landfill leachate or landfill gas, and no potential vinyl chloride-forming parent compounds where detected in groundwater, other than low concentrations of 1,2-dichloroethene. When the landfill was originally constructed, refuse was placed on the ground surface without excavating below the water table. Therefore the primary reason that leachate is formed within the landfill is because precipitation infiltrates through the cover and mounds in the refuse. At this time, a large amount of leachate is being generated and is being released to the surrounding environment. If this infiltration and associated mounding were not to occur, very little leachate would be formed, and the landfill contents will degrade at a very slow rate. Shallow groundwater, flowing from north to south, flows mainly below the refuse with only marginal refuse contact because the natural water table would have been below or at the original ground surface which is at the base of the refuse. Therefore constructing an effective cap on the landfill will minimize these adverse impacts and the chance of future releases from the landfill further impacting downgradient groundwater. Given that the impact of lateral groundwater flow through the base of the refuse currently appears to have a

negligible impact, the future impact is also expected to be negligible.

Comment 17: Are there pretreatment standards for the discharge of treated groundwater from solid waste landfills to a publicly owned treatment works? Does the City of Woodstock have a number for BOD (Biochemical Oxygen Demand) that they'll allow?

Response: The City of Woodstock does have a sewer discharge pretreatment ordinance that requires specific chemicals and other parameters to be below certain limits prior to discharge to the municipal treatment plant. The discharge flow and concentrations from the groundwater extraction system would be subject to these limits. Also, there are Federal and State ARARs pertaining to discharges to a POTW that have been identified in the Record of Decision. These ARARs will also have to be met for this type of action to occur.

The groundwater would have to be analyzed for each of the identified ARARs, and the flow rate would have to be acceptable for the contaminated groundwater to be discharged to the POTW.

If the pretreatment standards cannot be achieved, an onsite pretreatment system will have to be constructed. This remedial action will be fully evaluated during the remedial design stage.

USEPA attempted to confirm the exact number for BOD that was allowable, but the City of Woodstock did not provide this information in time for this response.

Comment 18: How good is the cost estimate for groundwater remediation if we don't know whether an onsite treatment facility would have to be put in place if the public treatment plant cannot accept the effluent because it exceeds their standards?

Response: The cost figures provided in the FS for the groundwater extraction system are a reasonable and conservative estimate because they consider on-site pretreatment. If the City of Woodstock POTW could handle the flow and the chemical constituents, then costs associated with a granular activated carbon and air stripping tower could be eliminated.

Comment 19: Isn't extracting groundwater during treatment going to ruin the wetlands? If you find out that you cannot do the

groundwater pump and treat program without dewatering wetlands, what happens then?

Response: One of the environmental goals for this site is to preserve and protect the wetlands. This is specifically why a pilot study would need to be performed for the groundwater extraction system. If the study demonstrated an impact on the wetland would occur from a full scale pumping system, several options would be available. First the system pumping rates and number of wells could be scaled back while ensuring extraction of the contaminants is still effective. Secondly, once the water is treated, it could be reintroduced to the wetland, creating a balance in the water flow.

In addition, prior to developing a pilot study for pump and treat, the Agencies will be investigating further the potential to use bioremediation as a means of remedying the vinyl chloride plume. The Agencies will provide additional information to the community and the other interested parties as this potential remedy develops.

Comment 20: How long will you have to go with a groundwater treatment pilot program before you know whether it's working or not?

Response: This determination cannot be made at this time with any reasonable degree of certainty until such time as the pilot program is underway, data is collected, and preliminary evaluations and/or modifications to the system are completed.

Comment 21: If a groundwater extraction and treatment program were done first and after a period of time that shows that the groundwater has been cleaned up to vinyl chloride concentrations below 2 parts per billion, would the geosynthetic liner be required, or could we then put on a two foot of suitable material on the landfill and go back to the Alternative 4 cover?

Response: The requirement to comply with 811.314 for the landfill cover, as opposed to 807, is based on the inadequacy of the 2-foot suitable soil option. One of the reasons for the 811.314 cover requirements is to further reduce future leachate generation and prevent releases to the environment. The groundwater extraction requirement is currently based on removal of only the vinyl chloride.

1.4 ECOLOGICAL ISSUES

Comment 22: What are the environmental effects of that dump out there? What are the specific effects on the environment? What is the effect of the leachate on Kishwaukee River?

Response: The ecological assessment conducted during the RI indicated that copper, mercury, and zinc concentrations in surface soils at the site may adversely affect small terrestrial mammal populations. Leachate is contributing to high iron in surface waters posing a threat to aquatic receptors. No conclusions could be reached as to whether ecological effects have occurred due to the presence of other inorganic contaminants (metals) identified in the surface water and sediments due to the lack of biota sampling or biological assays.

Comment 23: As vinyl chloride contaminated groundwater discharges into the wetlands, is this a violation of surface water quality standards?

Response: Vinyl chloride has been detected in groundwater monitoring wells, downgradient from the landfill, which are located in the wetland. Vinyl chloride was not detected in any of the surface water samples that were collected during the RI. There is currently no evidence of surface water quality violations resulting from discharges from the landfill.

Comment 24: Do we know what vinyl chloride contaminated groundwater discharge is doing to the wetlands as a biological system?

Response: There was no evidence uncovered during the RI indicating that the vinyl chloride groundwater contamination is impacting the wetlands as a biological system.

Comment 25: Why is the consultant calling this pool of vinyl chloride stagnant if it is moving upward, and what makes it move upward? I cannot understand how this groundwater is stagnant. Generally groundwater moves in one direction or another, although perhaps very slowly. I would like to have an explanation in the responsiveness summary as to how the stagnant groundwater can be explained and what the consequences of this now apparent upward movement of the vinyl chloride into the wetlands is on the biological ecological systems in the wetlands.

Response: The groundwater itself is not stagnant. Groundwater generally moves from high points (hills) to low points (valleys) where it may intersect the ground surface to feed

streams and rivers. In the case of the Woodstock Municipal Landfill site, the shallow groundwater flows downhill towards the wetlands southwest of the site where it discharges to form standing water during wet periods of the year. The wetland area southwest of the landfill is a low point for the entire area and shallow groundwater from all directions appears to move towards it (like water moving towards the lowpoint in a bowl) and discharges into the wetlands which are drained by Kishwaukee River. In this way the vinyl chloride groundwater contamination plume has moved away from the landfill and now occupies an area in the shallow aquifer under the wetlands. Because there appears to be shallow groundwater flow towards the wetlands from all areas, the PRPs refer to the groundwater contamination plume as "stagnant".

1.5 EXPOSURE AND RISK ASSESSMENT

Comment 26: What is the criteria that the USEPA uses to consider something a health risk?

Response: EPA is required by regulations set forth in 40 CFR section 300.430 to use two different types of criteria, one type for carcinogenic compounds and a different type for systemic toxicants. For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound life-time cancer risk to an individual of between 1 in 10,000 and 1 in 1,000,000 using information on the relationship between dose and response. The 1 in 1,000,000 risk level is used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site (which might have combined effects) or multiple pathways of exposure. For contaminants that are systemic toxicants, acceptable exposure levels are concentration levels to which the human population, including sensitive subgroups, such as children or the elderly, may be exposed without adverse effect during a lifetime or part of a lifetime, incorporating an adequate margin of safety.

Comment 27: Is 5 parts per billion the acceptable level for vinyl chloride and is that for drinking water?

Response No, the acceptable level for vinyl chloride is 2 parts per billion and that is for groundwater. This level is the maximum level allowed by the Illinois Groundwater quality standards for Class I potable groundwater resources.

Comment 28: You have not proven to me how dangerous the landfill is. How much water do I have to drink? What chemicals are in the soil and how long do you have to be exposed to them before it becomes a unacceptable health risk? How much air do I have to breathe and for how long?

Response: Vinyl Chloride was detected in the groundwater and was determined to pose an unacceptable health risk under future use scenarios. Although there are also other pathways of exposure to contaminated groundwater that were considered, an unacceptable health risk would exist if the groundwater is ingested as drinking water at an offsite residence at a rate of 2 liters per day, 350 days per year for 30 years.

Chemicals detected in surface soils that contribute to an unacceptable human health risk at the site include: phenanthrene, di-n-butylphthalate, fluoranthene, pyrene, butylbenzlphthalate, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(g,h,i)pyrene, benzo(b)fluoranthene and benzo(k)fluoranthene. Standard assumptions were used to estimate incidental ingestion and dermal exposure to surface soil in determining that an unacceptable human health risk is present. According to Table L-2 in the RI report, for an older child an unacceptable risk would occur based on the assumption that 100 mg of soil per day would be incidentally ingested, 4 days per week, 35 weeks per year, for 10 years. It was also assumed that there would be dermal absorption from skin exposure to site soils at a rate of 1.45 mg/cm^2 over a 1490 cm^2 area of the hands and feet for the same period of time that incidental ingestion would occur.

As indicated in this comment, the risks from inhalation of volatile chemicals released indoors due to landfill gas migration under a future use scenario were determined to be unacceptable. During the risk assessment it was assumed that the inhalation rate would be 20 m^3 per day, 350 days per year for 30 years.

The above discussion is very general and summarizes only selected parts of the complex evaluation that was conducted during the baseline risk assessment for the site. Detailed discussions of the risks posed by the site are included in Section 8 of the RI Report for the site. The RI report has been included as a part of the Administrative Record and is available for public review at the Woodstock Municipal Library.

1.6 COMPARISON TO OTHER SITES

Comment 29: Is it feasible to compare the situation now at the Woodstock dump site to other landfills or dump sites that are maybe 10, 20 years older so that we'll know what kind of problems we could have in 10 or 20 years from now if the city decides not to go through with this or do a halfway job? Where do we sit on the dump evolution scale?

Response: Based on experience with other older and poorly maintained landfills, it is likely releases to surface water and groundwater would continue and potentially increase with time if no actions are taken. The landfill cover would continue to degrade to a point that the wastes themselves could be eroded and migrate from the landfill. In addition, a further degraded landfill cover would allow more infiltration into the landfill and more leachate to be formed.

1.7 EQUIVALENT PERFORMANCE OF OTHER ALTERNATIVES

Comment 30: You are saying that we have to have a cap. When you gave us your options one was no action. If that was one of our options, why can't we look at that then?

Response: CERCLA requires that the "No Action" alternative be evaluated at every site to establish a baseline against which all other alternatives are compared. Under this alternative, no cleanup actions would take place and the site would remain in its present condition.

Comment 31: It says in the FS that Alternative 4 would use suitable material to reconstruct the cover. It doesn't seem to me that you would allow us to a decide what suitable material is. Why wouldn't there be a regulation saying it has to be two feet of clay or it has to be three feet of concrete or whatever?

Response: There is a regulation in Illinois specifying what must be included in a landfill cap. That regulation is 35 Illinois Administrative Code Section 811.314. This regulation requires a low permeability layer in the cover to be equivalent or superior to 3 feet of compacted earth with a permeability of $\leq 1 \times 10^{-7}$ cm/second. The Agencies have determined that this regulation is an ARAR (Applicable or Relevant and Appropriate Requirement) for the site.

Comment 32: It says in the FS that Alternative 4 would use suitable material to reconstruct the cover. What do the PRPs call suitable material in Alternative 4?

Response: Suitable fill described in Alternative 4 appears to be compacted earth with a permeability of 8.5×10^{-7} cm/second. This fill specification was used by the PRP's consultant in Appendix C to determine the amount of infiltration which may occur if the cap was reconstructed. To meet ARARs for the site, a low permeability layer will need to have a permeability which is no greater than 1×10^{-7} cm/sec. Consequently "suitable fill" as proposed by the PRPs does not meet the requirements as specified in the State of Illinois regulations.

Comment 33: Was your primary concern with alternative 4 that it will not stop infiltration through the cap enough to eliminate the leachate seeps, or was there some other criteria with which you had a concern on Alternative 4?

Response: Regulations found in Section 300.430 of Volume 40 of the Code of Federal Regulations (40 CFR 300.430) require that USEPA consider 9 criteria when evaluating an Alternative. These 9 criteria are listed and defined in the Record of Decision. Alternative 4 does not favorably satisfy the 9 evaluation criteria for the following reasons:

1) The cap proposed in Alternative 4 would not attain Applicable or Relevant and Appropriate Requirements (ARARs) under State environmental laws and therefore would not satisfy the criterion of *Compliance with ARARs*. The cap proposed in Alternative 4 would not meet the requirement in 35 IAC 811.314 for a landfill cover system because: 1) the low permeability layer as proposed would be an insufficient thickness; 2) the low permeability layer as proposed would have too high a permeability; and 3) the final protective cover layer over the low permeability layer have an inadequate thickness.

2) Alternative 4 would not favorably satisfy the criterion of *long term effectiveness and permanence*. USEPA is required to consider the adequacy and reliability of controls. This factor addresses in particular the long-term protection from residuals and the potential need to replace technical components of the alternative, such as the cap. Under this criterion USEPA is also required to consider the mobility of untreated waste remaining at the conclusion of the remedial action. When considering long term protection from residuals USEPA believes that the Alternative 4

cap would have an insufficient thickness of final cover material to adequately protect the low permeability barrier layer and that this would lead to loss of effectiveness and possibly failure of the cap's barrier layer over time. In addition, there are other Alternatives which satisfy this criterion and are considerably more effective in reducing the mobility of waste materials remaining at the conclusion of the remedy. For example based on information submitted by the PRPs in the FS, the cap proposed in Alternative 4 would result in approximately 1,929,840 gallons of leachate generated per year from infiltration, compared to only 605,880 gallons per year with the Alternative 7 cap. The amount of leachate generated from infiltration directly affects the potential for mobility of wastes remaining in the landfill.

When considering the need for replacement of technical components proposed by the Alternative, USEPA concludes that there is sound technical information available which indicates that the 6" of topsoil proposed on top of the low permeability layer in Alternative 4 will not adequately protect that layer from root penetration, freezing, and other mechanisms that may damage the barrier layer or severely reduce its effectiveness.

3) Alternative 4 would not satisfy the criterion of *reduction of toxicity, mobility or volume through treatment*, because no treatment of contaminated groundwater is proposed.

4) Alternative 4 would not favorably satisfy the *short term effectiveness* criterion. As a part of this criterion USEPA is required to consider the time until protection is achieved. No groundwater treatment is proposed in Alternative 4. In the FS, the PRPs estimated that it would take 40 to 70 years to achieve Illinois groundwater protection standards through natural attenuation processes. Consequently Alternative 4 does not favorably satisfy the *short term effectiveness* criterion.

5) Alternative 4 would not satisfy the criterion of *State Acceptance*.

Comment 34: According to the hydrologic evaluation model the alternative 4 cap would reduce infiltration quite a bit, but there would still be approximately 1.82 inches per year of infiltration percolating through the landfill. Is that too much infiltration?

Response: The Alternative 4 cap would allow too much leachate to be generated relative to other alternatives. For example, based on information submitted by the PRPs in the FS, the cap proposed in Alternative 4 would result in an annual leachate generation from infiltration of approximately 1,929,840 gallons/yr. That can be compared to less than 605,000 gallons/year for Alternatives 6 through 11. Alternative 4 would therefore generate an additional 1,323,960 gallons of leachate per year compared to Alternatives 6-11. Under the criterion of Long term effectiveness, the USEPA is required to consider the degree of mobility of untreated wastes remaining in the landfill if a remedial alternative were to be undertaken. The amount of leachate generated from infiltration directly influences the potential for mobility of wastes remaining in the landfill, and is an important consideration in the selection of a remedial alternative at the Woodstock Municipal Landfill site.

Comment 35: I believe that the only current unacceptable human health risk identified is surface soil. Can this be corrected with any other alternative other than alternative 7?

Response: Unacceptable human health risks are posed by surface soil contamination and exposure to debris. These current health risks would be corrected under each alternative that specifies capping (Alternatives 4-11).

2.0 PERMANENCE OF REMEDY AND EFFECTIVENESS

Comment 36: Would the remedy have to be redone to meet new regulations adopted in the future?

Response: As long as contaminants remain on-site, there is the possibility that further remedial actions may be required in the future. However, if a chosen remedy results in compliance with the identified ARARs, and that compliance is maintained, the USEPA would not retroactively add additional ARARs to the Record of Decision after it was issued.

Comment 37: How many geosynthetic liners are in existence and how long have they been in place? How long have any been monitored and what is the expected life of the geosynthetic? The remedy you're proposing, is that in place anywhere else right now? What has been your experience with it? What is your experience with having to do remedies to the remedy? Have you run across any cases where there has been a failure?

Response: Refer to Comment 13 response. Relative to the use of a bentonite product, bentonite has been used for nearly 65 years as a commercial water flow inhibitor. The fabric bentonite composite has been used for up to 13 years. There are at least 530 installations where this product has been used throughout North America. (160 million square feet installed).

No failures of the product have been observed and the product and workmanship are generally guaranteed for 25 years. The failures that have occurred have typically been related to geotechnical issues surrounding excessively steep side-slopes and friction conditions between the membrane and adjacent cover soils. Due to the relatively flat nature of the slopes at the Woodstock site, and the requirement to regrade the perimeter slopes to less that a 4 ft horizontal distance for each 1 ft vertical distance, failure related to these conditions is not anticipated. The final decisions about side slopes will be evaluated in the remedial design stage.

Comment 38: If we started doing everything today and it worked perfectly fine, how soon would you be done. When would USEPA be happy that nothing is leaking out and the groundwater is getting fixed?

Response: Typically a remedy becomes "operational and functional" either one year after construction is complete, or when the remedy is determined concurrently by the Agencies to be functioning properly and is performing as designed, whichever is earlier. However, in accordance with 40 CFR 300.430(f)(4)(ii) if a remedial action is selected that results in hazardous substances, pollutants or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, as is the case with the Woodstock site, USEPA must review such action no less often than every five years after initiation of the selected remedial action.

The vinyl chloride in the groundwater must be remediated to a level of 2 ppb before extraction and treatment ceases. If the level of vinyl chloride in the groundwater exceeds 2 ppb at some later date, remediation will again be required to reduce the concentration to within the allowable level.

3.0 SUPERFUND PROCESS

3.1 SUPERFUND PROCESS - GENERAL QUESTIONS

Comment 39: What type of reaction, what type of response, what level must our response go to for it to have an impact on your decision of your recommendation number seven, to make a change in that recommendation? What do you need to see from us citizens to cause that type of impact? What is your threshold. What can we say if we decide to say it that makes an impact on you?

Response: EPA may change a remedy recommendation if new technical information, that was not previously available, is submitted during the public comment period, or if an alternate plan is proposed that meets the evaluation criteria and addresses the risks at a site.

Comment 40: If we decide not to agree to this, the City of Woodstock, what is your next step?

Response: The USEPA will still attempt to negotiate with the remaining PRPs to secure agreement to fund the Remedial Design and Remedial Action.

Comment 41: If Woodstock landfill were to come under Superfund's scrutiny today, would it be placed on Superfund?

Response: The site was scored under the Hazardous Ranking System at the time it was proposed to be placed on the NPL, and as the site is now on the NPL there is no reason to rescore it. However, as a result of the detailed investigation conducted at the site, unacceptable risks that require mitigation were documented.

Comment 42: Can the site be removed from the NPL and will that removing the site from the NPL eliminate it from the Superfund program and thus become a state problem?

Response: The site cannot presently be removed from the NPL since there are contaminants left on the site. Refer to the previous comment for additional explanation.

Comment 43: How much money is in Superfund?

Response: The USEPA budget for the 1993 fiscal year as authorized by Congress is approximately 2.5 billion dollars.

Comment 44: Are you required by law only to look at the alternatives presented in the FS?

Response: No, USEPA will evaluate any alternate plan that is received by the agency during the public comment period. This analysis would include an evaluation of the Alternate plan against the nine evaluation criteria, as required by Superfund regulations.

Comment 45: Woodstock followed all rules and guidelines sent to them by IEPA to make sure that the landfill was operated properly. Although technology or legislators have changed those rules, it seems unfair to go back and penalize the City of Woodstock when they did nothing wrong.

Response: Environmental statutes, as written by the U. S. Congress apply a concept of strict liability which means if you are a "person" covered by the statute and you violated the statute, then you may be liable even if you supposedly followed all the rules.

It should be noted that IEPA filed a complaint against the City of Woodstock in 1972 regarding operation of the landfill. Substantiated charges of open dumping, liquid deposition without approval, failure to follow set guidelines, and operating without a permit were filed. Woodstock was ordered to cease and desist all violations, obtain the necessary permits, and was fined for its actions. The IEPA also attempted to require Woodstock to install a leachate collection system and a groundwater monitoring system, but Woodstock successfully petitioned under hardship and these systems were never installed.

3.2 SUPERFUND PROCESS - PRP AND ENFORCEMENT ISSUES

Comment 46: If you can find additional PRPs, how do you know if they have the financial capability of contributing to the fund? Do you sue them? Do you fine them and put them out of business if they are still in business?

Response: If additional PRP's are identified, the USEPA will issue a notice letter to them requesting their participation in negotiations to pay for the remedial action at the site. The USEPA is not privy to the financial capabilities of a PRP to fund the remedy. If a PRP or PRPs refuse to pay for the remedy, the USEPA may take the following actions: 1) issue an order for the PRPs to fund the remedy, or; 2) USEPA

may fund the remedy and later seek reimbursement of the cost of the remedy through court action.

Comment 47: Can the USEPA enforce a tax levy on to us to cover those costs?

Response: The USEPA does not have the authority to place a tax levy on the City of Woodstock to pay for the remedy.

Comment 48: What authority does the state have to enforce the institutional controls? The validity of these institutional controls should be considered very, very weak and they really do nothing to protect human health and environment.

Response: USEPA agrees that institutional controls in and of themselves are not protective of the environment. Institutional controls are primarily legal measures such as a restrictive covenant on the landfill property deed, acquisition of the contaminated area, and local ordinances prohibiting certain activities. The State does have the authority to enforce institutional laws through the state court system.

Although USEPA expects to use institutional controls in conjunction with other remedial measures, USEPA also recognizes that institutional controls are not as reliable as other control measures. Consequently, the regulations which govern the Superfund program, as found in Section 300.430(a)(1)(iii)(D) of Volume 40 in the Code of Federal Regulations, dictate that the use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of the remedy.

Comment 49: Is there some way you break down responsibility among PRPs if you had a small company that might have dumped a little bit, "X" amounts of yards of material.

Response: The PRP(s) that sign the consent degree for the RI/FS agree to fund all of the RI/FS costs. Similarly, PRP(s) that sign the consent degree for implementation agree to pay for implementation of the remedial action and long-term care. How the costs are distributed between the PRPs that sign the decrees, is dependent upon negotiations between the PRP(s).

In addition, the PRP(s) that have signed the consent degree can negotiate settlements with other non-signing PRPs, or they can take separate legal action against the remaining non-signing PRPs.

3.3 COMMUNITY ACCEPTANCE/INSTITUTIONAL CONTROLS

Comment 50: What guarantees can the state or the USEPA make that institutional controls will be kept in place since they can be legally reversed by the next city council?

Response: The USEPA and IEPA cannot guarantee that institutional controls would remain in effect. If USEPA or IEPA became aware that an institutional control was changed, then legal action could be taken in opposition to the change.

Comment 51: Actions should only be taken to address current risks and for continued monitoring, and that institutional controls should be relied on to eliminate potential health hazards.

Response: The regulations which govern the Superfund program, as found in Section 300.430(a)(1)(iii)(D) of Volume 40 in the Code of Federal Regulations, dictate that the use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-off among alternatives that is conducted during the selection of the remedy. Consequently, institutional controls cannot be relied on as the sole remedy at the Woodstock Municipal Landfill site because active remedial measures, such as groundwater extraction and treatment, are practical.

Comment 52: The USEPA plan as presented in Alternative 7 is unwarranted because it is based on unsupported assumptions of future use of the site.

Response: The contention that USEPA's preferred alternative is driven only by future use scenarios is incorrect. There are current unacceptable risks to human health and the environment from contaminated surface soils, debris exposed through the degraded landfill cap, and contamination of surface water and sediments adjacent to the landfill from leachate seeps. It is clear that an effective cover is needed on the landfill to prevent possible exposure to contaminated surface soils and exposed debris, and to minimize leachate formation by minimizing the amount of

precipitation that infiltrates through the landfill cap. The cap proposed in the Alternative endorsed by the PRPs (Alternative 4) is unacceptable because it would not comply with the ARARs for the site, and does not favorably satisfy the evaluation criteria (such as long term permanence) which USEPA is required to use in choosing a remedy. Although remediation of offsite groundwater contamination is in part driven by unacceptable human health risks under a future use scenario (assuming that the groundwater is used as drinking water), the groundwater remedy is required and justified by, among other things, the Illinois State groundwater quality standards and federal maximum contaminant levels (MCLs). The existence of these ARARs, in combination with the unacceptable potential future risks and the NCP directives that "contaminated ground waters will be returned to their beneficial uses wherever practicable, within a time frame that is reasonable" and that "the use of institutional controls should not substitute for active response measures", provide a basis on which the groundwater component of the remedy is premised.

Comment 53: The leachate in the landfill is weak compared to test results of other similar landfill sites. Therefore minimal action is called for.

Response: USEPA does not agree that leachate at the Woodstock Municipal Landfill site is "weak" compared to test results of other similar landfill sites. Based on sample results from the RI, leachate at the Woodstock Municipal landfill site exceeds maximum typical leachate concentrations for zinc, lead, nickel, and copper in other Municipal Solid Waste Landfills for which USEPA has collected data. (Reference: *Characterization of MWC Ashes and Leachates from MSW Landfills, Monofills, and CO-Disposal Sites (EPA, 1987f)*.

Comment 54: A new cover needs to be in place, and the PRPs should not try to get by with a less than minimum cover. IEPA regulations require a 3 foot cover, and that should be adhered to. State and Federal standards are there for a reason, and the city shouldn't be using scare tactics of higher taxes to try to convince the residents that the minimum cover would be too expensive. In the case of environmental cleanup, dollar expenses should not be of prime concern. The safety of the ecosystem, which includes all life, should be our concern. As a resident of Woodstock, I would rather pay higher taxes and have a city that isn't contaminated by a Superfund site that wasn't properly monitored.

Response: USEPA and IEPA agree with the need to comply with the ARARs and agree that the Alternative 4 cover endorsed by the PRPs would not be adequately protective of the Environment.

4.0 LANDFILL REGULATIONS/STATE RESPONSIBILITY

Comment 55: Does the state allow any other kind of cap than the geosynthetic proposed in Alternative 7?

Response: Yes, the State would allow any cap which meets the regulatory standard in 35 IAC 811.314. To meet the regulatory standard a cap must include a low permeability layer overlain by a final protective layer. The low permeability layer may be one of three different types:

1. A compacted earth layer of three feet in thickness and achieving a permeability of $1x10^{-7}$ cm/sec; or

2. A geomembrane providing equivalent or superior performance to the compacted earth layer, one that can withstand normal stresses, and must be placed on a base free from sharp objects or other materials which may cause damage; or

3. Any other low permeability layer with equivalent or superior performance.

The final protective layer must cover the entire low permeability layer, must be at least three feet thick, must protect the low permeability layer from freezing and plant root penetration and must be able to support vegetation. This generally includes rooting zone material, drainage zone material and topsoil.

Comment 56: It is my understanding that the clay cap on the dump is no longer in compliance with present day rules. Will reconstruction as proposed in alternative 4 bring the site up-to-date?

Response: No, the reconstruction proposed in Alternative 4 would not bring the site to current standards. Current standards which must be met during construction of the cover can be found in 35 IAC 811.314. The cover proposed in Alternative 4 would not meet those standards.

Comment 57: At any time was this landfill licensed by any agency of the federal or state government?

Response: The Woodstock Municipal Landfill was in operation as a dump site as early as 1935. While there may have been permits granted by local agencies, such as a county health department, it was issued a permit by the Illinois Environmental Protection Agency in October, 1972. In 1975 the City of Woodstock ceased accepting waste at the landfill. At that time, IEPA classified the landfill as closed. Inspections were conducted by the IEPA to check on the placement of the final cover. Placement of the final cover was completed in 1980. At this time, the landfill was classified By IEPA as closed and covered.

Comment 58: Can the state be a PRP?

Response: Under Superfund law there are four classes of parties who may be held liable for costs associated with a Superfund site. These parties, called potentially responsible parties or PRPs are:

1. The current owner and/or operator of the site;
2. The owner or operator at the time hazardous substances were disposed of at the site;
3. Any person who arranged for disposal or treatment at the site (commonly referred to as a "generator"); or
4. Any person who accepted hazardous substances for transportation to a site selected by that person (commonly referred to as a transporter").

If the State fits into one of these categories it may be considered to be a PRP.

Comment 59: It seems to me the citizens of Woodstock and Woodstock city government complied with all state and federal laws when they closed this particular landfill. And yet it seems to me the regulations that we follow, the people who set up the regulations don't deem themselves responsible for what we now have, and are not, in essence, becoming liable as we are to following their regulations. That is totally unfair.

Response: Environmental statutes, as written by the U. S. Congress, apply a concept of strict liability which means if you are a "person" covered by the statute and you violated the statute, then you may be liable even if you supposedly followed all the rules. The city is considered a PRP because the landfill they own and operated is the site of

releases of hazardou :bstances to the environment, not because the landfil :s not meet current state regulations. The st :e and federal government are not now implying that there as been any wrongdoing on the City's part. If there were not surface water releases or groundwater contamination coming from the landfill, neither the state nor federal government would be requiring the City of Woodstock to do anything to the landfill. However, this landfill as it exists does have releases to the environment. As such, they have to be dealt with and are being dealt with within the Superfund framework. CERCLA and the NCP mandate that USEPA and IEPA respond to those releases. This legislation defines as :iable those owners/operators, generators or transport associated with the site. That includes the City of Wc ock.

5.0 MISCELLANEOUS COM .TS

Comment 60: I do not understand why none of the remedial action alternatives you have considered -- including Alternative 7 that you are recommending -- focuses on bioremediation.

Response: In the FS, USEPA required that the PRPs evaluate the potential for using in-situ bioremediation of the groundwater. In section 4.6.1 of the FS, the PRPs concluded that in-situ biological treatment of the groundwater is difficult to implement, requires accurate placement of injection wells, bacteria, and nutrients, and is not proven nor sufficiently developed. The PRPs concluded in the FS that the concentration of organic compounds which exist in the contaminated area are not sufficiently high to perform as a food source to support biological treatment and since there are other more proven technologies available, in-situ biological treatment of groundwater was not carried forward during evaluation and selection of technology process options during the FS. Based on public interest expressed during the public comment period, USEPA has decided to more closely examine options for in-situ bioremediation of the groundwater. This will be done during the remedial design phase of the project.

A recent technology involving recirculation of leachate to degrade and bioremediate actual waste materials to the greatest extent possible is being implemented at a number of new and existing landfills. This approach relies on catching leachate that is charged with naturally occurring microbes at the base of the landfill and reinjecting it at the top of the landfill so it can percolate back down through the waste layers. However, this approach is not feasible at the Woodstock Municipal landfill site because

there is no leachate collection system to remove leachate, and there is no basal liner to prevent releases of leachate to underlying groundwater.

C. SUMMARY OF COMMENTS FROM THE POTENTIALLY RESPONSIBLE PARTIES

Comment 61: The following written comment was received from the McHenry County Defenders (similar written and verbal comments were also received from several citizens during the public comment period):

SUMMARY OF MAJOR POINTS IN DEFENDER'S LETTER:

1) Vinyl chloride releases to air pathway not considered in RI/FS.

2) Pump and treat seams impractical, USEPA should investigate in-situ bioremediation.

3) Support any alternative that will stop leachate and avoid the need for an expensive leachate control system.

4) A trust fund should be established to assure long-term monitoring.

5) Costs can be reduced by using native grasses.

6) EPA should fund the construction of a co-composting and recycling center next to the site.

Response: From a technical perspective, native grasses and wildflowers could be used on the site if the vegetative cover is compatible with the landfill and would exhibit characteristics similar to the recommended vegetation. These characteristics include erosion control, heartiness, perennial nature, evaportranspiration rate, and maintenance requirements. Additionally, the cost effectiveness of this cap component must be investigated further. At this time, it is unknown whether there would be a cost savings by using a native prairie-type cap. The final decision on the exact type of vegetation to be used would occur during the remedial design.

Vinyl chloride was not detected in the leachate, landfill gas, or the surface water. Releases from these sources are therefore not anticipated. However, the release of vinyl

chloride during pump and treat will be closely monitored by the Agencies, and no releases which exceed the identified ARARs or which may pose a risk to human health and the environment will be allowed.

The USEPA and IEPA will investigate further the potential for bioremediation at a remedial option for clean up of the vinyl chloride plume.

The USEPA and IEPA also fully support the selection of a remedy which minimizes leachate generation, stops releases to the environment, and avoids the need for a leachate collection system if at all possible.

Several mechanisms are available to provide funding during the long-term care period. USEPA will require a trust or similar funding mechanism as part of the remedial activities.

In regards to the final point, while CERCLA does not provide for funding of a co-composting/recycling center, the USEPA and IEPA fully support this initiative and will include the siting of this facility into the overall site design.

Comment 62: A number of Woodstock residents submitted written comments indicating that the remedy chosen should restore the wetlands around the site.

Response: The remedial action selected for the site will not destroy any of the wetlands surrounding the landfill due to placement of the cap. However, restoration of those wetland areas where the removal of the contaminated sediments will occur will be required.

Comment 63: From what I can gather it appears that the USEPA and IEPA feel that the entire landfill must be removed and a new liner placed.

Response: USEPA and IEPA are not recommending that the entire landfill be removed and a liner placed under it. USEPA and IEPA are also not recommending that the landfill be retrofitted with a leachate collection system. But because the landfill does not have a basal liner or leachate collection system, USEPA and IEPA have selected a cap that provides for the best overall protection, is cost effective, meets ARARs, and minimizes leachate production.

Comment 64: Continued sampling and testing on a quarterly, or at least semi-annually basis, should be done.

Response: USEPA agrees with this comment and notes that periodic long term monitoring is a part of each alternative presented in the FS. Monitoring will include sampling, testing, and visual inspection. A detailed monitoring plan will be developed during the Remedial Design phase.

Comment 65: A comment was received that with the rapid advancement in new technology on clean up it would seem more prudent to monitor the landfill and if an immediate problem becomes apparent take care of it at that time.

Response: Current unacceptable health risks exist which do represent an immediate problem. The contaminated groundwater plume and leachate releases to the environment also constitute an immediate problem that must be addressed and remedied. In addition, the lack of action will allow the current landfill cover to continue to deteriorate and may increase the scope and cost of the remediation that is required.

Comment 66: I am firmly opposed to the proposal of outgassing the vinyl chloride, and request that you provide a less hazardous solution.

Response: Emissions of vinyl chloride associated with groundwater extraction and treatment will be required to comply with all ARARs and cannot pose an unacceptable risk to human health and the environment. USEPA cannot prohibit this action from occurring if these conditions are met.

Comment 67: Moving contaminated material from one place to another simply increases the dispersion of the offending chemicals both in rate and in total and creates another contaminated site. It just seems to me to be an unreasonable concept.

Response: The USEPA and IEPA do not propose to move the landfill contents to another site. The preferred remedial action is to cap the landfill and clean up the contaminated groundwater.

Comment 68: I would prefer to hear other options that are available in order to correct this problem. I am sure that there is more than one possible course of action and an alternative can be found to using tax dollars to correct the problem.

Response: The FS document, which is a part of the Administrative Record, presented eleven alternatives which were developed through an extensive screening and evaluation. Prior to development of the final eleven alternatives presented in the FS, a number of various technologies and related process

options were considered for each operable unit. A breakdown of the number of technologies and process options considered during the FS follows:

Operable Unit	Technologies	Process Options
Groundwater	14	17
Soil	17	11
Leachate	7	5
Air	4	5
Surface water	7	17

A detailed description of all options considered and the rationale for selecting the remedy described in the Record of Decision can be found in the public repository which is available for review a the Woodstock Public Library.

Comment 69: Who closed the landfill?

Response: The City of Woodstock was the owner and operator of the Woodstock Municipal Landfill site at the time of closure and the city council voted to close the landfill.

Comment 70: Isn't long term monitoring only for 30 years?

Response: No. Monitoring will be required until such time that no contaminants remain on-site. The 30 year reference is only used to determine the potential total cost of the remedy over a long period of time. Costs beyond the 30 year point are very rough estimates and are generally not considered when costing out the remedy due to the uncertainties associated with this type of estimate.

Comment 71: I support Alternative 5 over the preferred remedy of Alternative 7 because it is more cost effective and still favorably satisfies the 9 evaluation criteria. Based upon the summary it appears the projected $3.4 million difference in the two plans can be attributed to the geosynthetic clay cap. At this time I cannot support the use of geosynthetics due to my concerns with extreme weather conditions and QA/QC/human error problems that can plague installation. The city has also discussed utilizing the WML as a future co-compost facility. If alternative 5 doesn't include the following I urge the USEPA to consider it. The proposed onsite treatment facility could be constructed to discharge treated wastewater into an irrigation system for maintaining the revegetated layer for an indefinite period of time. This setup could reduce cover management, POTW treatment and possibly leachate management/monitoring costs. Cost effective remediation is important especially when you

consider that actual costs most always exceed projected costs.

Response: EPA disagrees that Alternative 5 favorably satisfies all of the 9 evaluation criteria. The Alternative 5 cover system clearly does not satisfy the criterion for compliance with ARARs as it would not provide a sufficient thickness of cover material over the low permeability layer, a sufficient thickness for the low permeability layer, or an adequate permeability of the low permeability layer to meet the 35 IAC 811.314 ARAR for the site. Alternative 5 would also not satisfy the criterion of State Acceptance. In addition, the Alternative 5 cover would not favorably satisfy the criterion of long term permanence (especially the assessment of potential need to replace technical components such as the cap) because it is provided with only 6" of topsoil as a protective cover over the low permeability layer. USEPA concludes that the Alternative 5 cap would have an insufficient thickness of final cover material to adequately protect the low permeability barrier layer and that this would lead to loss of effectiveness and possibly failure of the cap's barrier layer over time. USEPA notes that there is sound technical information available which indicates that the 6" of topsoil proposed on top of the low permeability layer in Alternative 4 will not adequately protect that layer from root penetration, freezing, and other mechanisms that may damage the barrier layer or severely reduce its effectiveness. The frost depth in Northern Illinois exceeds 30" indicating that the barrier layer proposed in Alternative 5 would be subject to potential frost damage since it would only be 6" below the ground surface. USEPA does not believe that a landfill vegetative cover type is available with suitable characteristics, that could be established with a root zone depth of less than 6". Therefore it is likely that opportunistic deep rooted weed species will encroach onto the landfill. USEPA is especially concerned that the type of damage to the barrier layer that is likely to occur from root penetration or freezing could go undetected during the periodic visual inspections of the landfill cover that will be required under an operations and maintenance monitoring program. In addition USEPA does not believe that vegetative cover with suitable characteristics could be proposed that could be established with a root zone depth of less than 6" to prevent damage to the barrier layer proposed in Alternative 5.

Relative to the concern of extreme weather conditions impacting the geosynthetics in the USEPA preferred remedy, the proposed design has three feet of protective cover over the barrier layer, which is approximately equal to typical frost depth in the Woodstock area. The concern expressed regarding installation questions will be addressed by

requiring strict quality assurance/ quality control (QA/QC) requirements and oversight during construction.

USEPA believes that there are positive cost benefits with Alternative 7 when compared to Alternative 5. A 69% reduction in the amount of leachate generated from infiltration could be achieved (equivalent to a difference of approximately 1.3 million gallons per year) for only a 45% increase in cost.

EPA believes that the proposal to irrigate the site with the discharge from the groundwater extraction and treatment system is impractical since irrigation could not be conducted during the winter months.

Comment 72: Is the USEPA proposed remedy also IEPA's preferred remedial alternative.

Response: Yes, USEPA and IEPA agree on the recommended remedial alternative for the Woodstock Municipal Landfill site.

Comment 73: Is the USEPA requiring anything more than the State of Illinois would require?

Response: No, USEPA and IEPA are in agreement as to the preferred remedial alternative.

Comment 74: Are the wetlands protected against any kind of development?

Response: A permit would need to be applied for and received before any part of the wetlands could be legally filled during development. Development of wetlands can and does occur with a permit, but typically an offset or compensatory wetland would need to be developed in a nearby area as a part of the development project.

Comment 75: During the Public meeting the City Attorney requested that USEPA explain what the factual models are for the baseline risk assessment on which the assessment is based.

Response: The health risks associated with current land use conditions would occur under the trespasser scenario - trespassers (children/adolescents playing on-site) would be exposed to PAHs in soil and debris. The health risks under the future land use scenarios would include using the site as a park and recycling/composting center, building a residence downgradient of the site and being exposed to contaminated groundwater, or developing the site as a residential

community. A complete discussion of all the scenarios is included in the Baseline Risk Assessment in the RI report.

Comment 76: The city of Woodstock submitted a written comment stating that they are opposed to the proposed remedy as they believe it is overly conservative and would result in an unnecessary cost to the residents and tax payers of the City of Woodstock. The City of Woodstock agrees that corrective action is needed at the site and that a major component of the corrective action should involve the reduction of leachate generation. The city indicated that they believe that Alternative 4 can provide adequate protection of human health and the environment and that this alternative will protect the residents of the community at a substantially lower cost to the taxpayers. The city states that they must consider the cost and cost-benefit comparison of all expenditures and must justify the expenditure to the local tax payers. The city believes that future risks have been minimized through the institutional controls and in their written comment they offer to consider any additional restrictions or limitations on the future use of the site that are needed to assure that future use activities considered in the Baseline Risk Assessment do not occur. The city requests, in their written comment, that USEPA and IEPA again evaluate the information provided with the FS report and additional information that can be provided by the technical consultants to determine if a less costly option for correction action would provide adequate protection at the site.

In their written comment, the City of Woodstock requests financial assistance from Superfund to pay for at least a portion of the cost.

Response: USEPA and IEPA agree with the City of Woodstock that corrective action is necessary and that a major component of the corrective action should involve reduction of leachate. USEPA and IEPA further note that the only practical control for leachate (without the inclusion of additional engineering controls such as a leachate collection system) at the Woodstock site is an effective cap that minimizes leachate while favorably satisfying the criterion of long term permanence. USEPA disagrees with the City's contention that the preferred alternative (Alternative 7) is overly conservative. USEPA notes that the preferred alternative does not propose a leachate collection system as is typically required, but attempts to remediate existing groundwater contamination and to minimize infiltration into the landfill utilizing a cover that is cost effective and that will remain effective over the long term. USEPA does not agree with the City's proposal that a substandard cap should be constructed and institutional controls relied on

for protection. Institutional controls provide little, if any, protection against ecological and environmental impacts.

EPA does not agree that the preferred alternative represents an unnecessary expense. The cover system proposed in Alternative 4 would not be adequately protective of the environment because it would have an insufficient thickness of final cover material to adequately protect the low permeability barrier layer and that this would lead to loss of effectiveness and possibly failure of the cap's barrier layer over time. USEPA concludes that there is sound technical information available which indicates that the 6" of topsoil proposed on top of the low permeability layer in Alternative 4 will not adequately protect that layer from root penetration, freezing, and other mechanisms that may damage the barrier layer or severely reduce its effectiveness. The frost depth in Northern Illinois exceeds 30", indicating that the Alternative 4 barrier layer would be subject to potential frost damage, since it would only be 6" below the ground surface. There is not a landfill vegetative cover type that is available with suitable characteristics that could be established with a root zone depth of less than 6". Therefore it is likely that opportunistic deep rooted weed species will encroach onto the landfill. USEPA is especially concerned that the type of damage to the barrier layer that is likely to occur from root penetration or freezing could go undetected during the periodic visual inspections of the landfill cover that will be required under an operations and maintenance monitoring program.

As requested by the City, USEPA has reevaluated the information provided with the FS report and concludes that Alternative 7 is the least costly option that can be selected as a remedy and still meet Superfund criteria and be adequately protective. Alternative 4 must be eliminated from further consideration during selection of the remedy because it does not meet Superfund threshold criteria and does not favorably satisfy the primary balancing criteria. Under CERCLA an alternative must comply with ARARs and must provide overall protection of human health and the environment to be considered for selection as a remedy. Also, a consideration of long term effectiveness for the site includes an evaluation of the magnitude of risk from wastes remaining at the site under the alternative, as well as an assessment of the potential need to replace key technical components such as the cap. As discussed previously in this response, USEPA concludes that Alternative 4 would have an insufficient thickness of protective cover over the barrier layer and due to the resultant potential for damage or failure, would not favorably satisfy the criterion of long term effectiveness

and permanence. Alternative 4 does not favorably satisfy the criterion of short term effectiveness, or the USEPA preference for treatment, because no groundwater treatment would be included in the city's proposal.

Based on a cost analysis USEPA concludes that Alternative 7 is cost effective by providing the most cost benefit for effective reduction of leachate generated from infiltration when compared to the other alternatives. Both the City and USEPA agree that reduction of leachate is paramount to the success of any remedial action. Based on results of HELP modeling conducted by the PRPs during the FS, Alternative 7 would result in approximately 1.3 million gallons less leachate being generated each year than if the Alternative 4 cap were installed at the Woodstock Site. Based on the amount of leachate generated by each cap, the Alternative 7 cap is 69% more efficient. This benefit of increased effectiveness comes with only a 45% increase in cost of the capping portion of the remedy. Using Alternatives 4 and 5 as a baseline, Alternatives 10 and 11 reduce leachate generation by an additional 30% beyond the amount reduced by Alternatives 6 and 7, but with an additional 148% increase in cost. Based on this analysis Alternatives 6 and 7 will provide the best cost benefit in reducing leachate generation.

Since there are viable PRPs who are potentially able to fund the remedy, the USEPA and IEPA are not considering funding a portion of this remedy.

The Woodstock Municipal Landfill Steering Committee submitted numerous comments which were bound together in a volume titled "Public Comments on the Proposed Plan Woodstock Municipal Landfill Woodstock, Illinois. These comments are summarized below:

Comment 77: **EPA HAS IMPROPERLY BIASED THE ADMINISTRATIVE RECORD BY ITS REFUSAL TO ACCEPT OR EVEN PLACE IN THE RECORD NUMEROUS SOUND JUDGMENTS MADE BY WARZYN.**

Response: The USEPA reviewed all the Warzyn work products pursuant to the provisions of the Administrative Order on Consent ("AOC") which was signed by the City of Woodstock and Allied Signal Corporation. The AOC clearly stated that Warzyn's activities were subject to USEPA approval in consultation with IEPA. USEPA followed its own Agency guidance in determining which documents it would place in the Woodstock administrative record.

Comment 78: EPA REQUIRED AN APPR..CH TO RISK ASSESSMENT WHICH CAUSED THE RISKS FROM THE LANDFILL TO BE OVERSTATED.

Response: The USEPA did not require an approach to the Baseline Risk Assessment that caused the risks from the landfill to be overstated. The risk assessment was developed in accordance with the NCP and USEPA guidance, and clearly documents the fact that the impacts occurring to the surrounding media present unacceptable current and future risks to human health and the environment. The guidance states that the intent of determining a reasonable maximum exposure is to estimate a conservative exposure case that is still within the range of possible exposures to a receptor. This clearly was the rationale used for exposure scenarios developed for the Woodstock ..te. Additionally, guidance also requires that land use projections, while potentially useful informa-ion, are not to be relied upon as proof that a certai- .and use will or will not occur.

Sta..ments and positions contained under this heading, such as reliance on institutional controls, have been addressed in previous responses.

Comment 79: EPA INCORRECTLY REQUIRED WARZYN TO REMOVE ITS CONCLUSION THAT ALTERNATIVE 4 WOULD PROVIDE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT.

In their comments in this section the PRPs conclude that the landfill cover reconstruction, which is a primary component of Al- .native 4, would be adequately protective of human hea..n and the environment.

Re onse: USEPA and IEPA have concluded that the proposed Alternative 4 cover reconstruction would not be adequately protective of the environment. The National Contingency Plan directs that alternatives shall be assessed to determine whether they can adequately protect human health and the environment. As stated in 40 CFR 300.430, overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short term effectiveness, and compliance with ARARs. The proposed Alternative 4 cover reconstruction does not favorably satisfy the criteria of long term effectiveness and compliance with ARARs for the following reasons:

* Alternative 4 would not favorably satisfy the criterion of *long term effectiveness and permanence.* In accordance with the National Contingency Plan USEPA is required to assess the alternatives for the long term effectiveness and permanence they afford, along with the degree of certainty that the alternative selected will prove successful. The

NCP further directs that factors that must be considered should include the magnitude of residual risk remaining from untreated waste remaining at the conclusion of the remedial action and the adequacy and reliability of controls. Under this criterion USEPA is required to consider the mobility of untreated waste remaining at the conclusion of the remedial action and assess the potential need to replace technical components of the alternative, such as the cap. Based on information submitted by the PRPs in the FS, USEPA concludes that the Alternative 4 cover is not effective in reducing the mobility of waste materials remaining at the conclusion of the remedy. The potential for mobility of wastes remaining in the landfill is directly related to the amount of leachate generated from infiltration. Based on modelling in the FS, it is estimated that the Alternative 4 cover would reduce infiltration to 1.82 inches/year from the current estimated 6.9 inches per year. This is a 74% reduction in leachate generation from infiltration. The minimum cover required by current Illinois regulations would reduce leachate generation by 93%, to approximately 0.51 inches per year. According to the FS, Alternative 4 would result in approximately 1,929,840 gallons of leachate generated per year from infiltration, compared to less than 700,000 gallons per year with the minimum cap required by the current Illinois regulations. Therefore, the Alternative 4 cover would result in the additional generation of approximately 1.3 million gallons of leachate per year compared the minimum cap required by the current Illinois regulations. Because there are no other proposed controls for leachate, such as a leachate collection system or basal liner, USEPA believes that reducing leachate formation to the maximum extent practicable is essential for adequate protection of the environment.

When considering long term protection from residuals and the possible need for replacement of technical components of the remedy, the Alternative 4 cap would have an insufficient thickness of final cover material to adequately protect the low permeability barrier layer and that this would lead to loss of effectiveness and possibly failure of the cap's barrier layer over time. USEPA concludes that there is sound technical information available which indicates that the 6" of topsoil proposed on top of the low permeability layer in Alternative 4 will not adequately protect that layer from root penetration, freezing, and other mechanisms that may damage the barrier layer or severely reduce its effectiveness. The frost depth in Northern Illinois exceeds 30", indicating that the Alternative 4 barrier layer would be subject to potential frost damage, since it would only be 6" below the ground surface. USEPA does not believe that a landfill vegetative cover type is available with suitable characteristics, that could be established with a root zone depth of less than 6". Therefore it is likely that

opportunistic deep rooted weed species will encroach onto the landfill. USEPA is particularly concerned that the type of damage to the barrier layer that is likely to occur from root penetration or freezing could go undetected during the periodic visual inspections of the landfill cover that will be required under an operations and maintenance monitoring program.

* The cap proposed in Alternative 4 would not attain Applicable or Relevant and Appropriate Requirements (ARARs) under State environmental laws and therefore would not satisfy the criterion of *Compliance with ARARs*. The cap proposed in Alternative 4 would not meet the requirements in 35 IAC 811.314 for a landfill cover system because: 1) the low permeability layer as proposed would be an insufficient thickness; 2) the low permeability layer as proposed would have too high a permeability; and 3) the final protective cover layer over the low permeability layer have an inadequate thickness.

Comment 80: The combination of institutional controls, natural attenuation, and monitoring is the appropriate remedy to address the contaminated groundwater.

Response: The use of institutional controls to supplement engineering controls is appropriate and will be a part of the remedy chosen for the Woodstock Municipal landfill site. However, regulations which govern the Superfund program, as found in 40 CFR 300.430(a)(1)(iii)(D), dictate that the use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of groundwaters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of the remedy. Consequently, institutional controls cannot be relied on as the sole remedy at the Woodstock Municipal Landfill site because active remedial measures, such as groundwater extraction and treatment, are practical to address groundwater contamination at the site.

Comment 81: The zone of groundwater contamination is completely beneath the landfill and the adjacent wetlands. The direct effect of extracting groundwater from beneath the wetland, will be the de-watering, and destruction of the wetland environment. In addition, implementation of a groundwater extraction system would require construction activities to occur in the wetlands.

Response: Implementation of any groundwater extraction, treatment or control system requires close monitoring of many aspects that could potentially be impacted by the system. For the Woodstock Municipal Landfill site, aspects that must be monitored include, but are not limited to, horizontal and vertical influence of dewatering, impact on the wetland water levels, limiting potential extraction of additional leachate from the landfill, flow rates, and the ability to reduce and capture contaminants.

USEPA and IEPA have previously agreed with that a pilot study would be appropriate to determine the effect on these specific conditions and allow calibration of the system to limit adverse impacts and maximize treatment efficiency.

In addition to fine tuning the groundwater extraction system, there are a number of viable options which could be used if necessary to prevent dewatering of the wetlands. For example, recharging treated water back into the groundwater by injection wells could limit the potential for dewatering the wetland and could create an artificial barrier control condition between the system and the landfill if the system is determined to be drawing leachate from the landfill.

Comment 82: Groundwater extraction is likely to be ineffective in reducing vinyl chloride concentrations in the aquifer beyond the rate which is already occurring by natural attenuation and biodegradation.

Response: USEPA believes that without obtaining further information through a pilot study extraction and treatment system, reliable conclusions about the lack of effectiveness of such a system, cannot be made.

Since the flow regime appears to be easily confined and the discharge location is known, installation of a groundwater control system is an appropriate response.

Comment 83: **ALTERNATIVE 4 DOES COMPLY WITH THE ARARs FOR THE WOODSTOCK LANDFILL.**

Response: It is contrary to law for the PRPs to assume the responsibility of identifying ARARs for a site. The NCP clearly states that lead (USEPA) and support (IEPA) agencies identify ARARs related to specific actions for a site. The lead and support agencies may also, as appropriate, identify other pertinent advisories, criteria, or guidance. In regards to the Woodstock site, the Agencies have clearly stated that the ARAR in regards to a cap is IAC 811.

It is important to note that the 811 rules were implemented to reduce the amount of leachate generated, reduce the amount of leachate available for escape, reduce leachate contact time, ensure quality control over liner construction, and improve monitoring and response requirements. Because leachate controls such as a leachate collection system or basal liner are not being specified in this Record of Decision, controlling leachate and adequate protection of the environment depend entirely on an effective cap. The necessity to satisfy the evaluation criteria and the above rationale most clearly require that 811 be identified as an ARAR.

Comment 84: The final cover requirement of Section 8.305 is the ARAR applied to the similar Tri-County/Elgin Landfills located in Elgin, Illinois.

Response: This statement is incorrect. The final cover requirement as stated in the Record of Decision for the Tri-County/Elgin Landfill is "Construction of a landfill cover (cap) in compliance with Title 35, Illinois Solid and Special Waste Management Regulations, 807.305 and RCRA Subtitle D cover requirements. The FS did contain a "D" type cap in Alternatives 8 and 9.

It is also important to note that conditions differ between the Tri-County/Elgin landfills and the Woodstock Municipal landfill site. At the Woodstock Municipal Landfill site the current Illinois Solid Waste Cover regulation, 35 IAC 811.314, more fully matches the site, and must be followed for adequate protection of the environment.

There are a variety of other leachate control mechanisms that are being applied to the Tri-County/Elgin Landfills Site that are not specified in the Record of Decision for the Woodstock Municipal Landfill Site. It is important to note that due to many site specific conditions at the Tri-County/Elgin Landfills, the remedial solution includes groundwater collection, treatment, and disposal, and landfill gas collection and flaring. In addition, at the Tri-County/Elgin Landfill, a confining silty-clay layer under the site acts in combination with the horizontal groundwater control system as a landfill liner.

A landfill cover system, by itself, can not be considered out-of context, that is, without the additional combination of remedial actions, as a sole remedial solution to a site. The final remedial action on a site is typically a host of controlling aspects that work together toward a single goal of reducing the risk of exposure. The combination and interaction of several remedial aspects becomes a

synergistic relationship that as a whole is considered the solution to the site.

The primary concern at a landfill is controlling leachate generation and migration. This control can occur at the landfill cover, with leachate extraction, or through groundwater flow control. It is not appropriate to simply compare the recommended landfill cover systems without comparing the site specific geologic, hydrogeologic and other aspects of the remedial package.

Comment 85: USEPA's Region V selected natural attenuation, along with monitoring and institutional controls, as the remedy for groundwater contamination at the Oak Grove Sanitary Landfill, located in Anoka County, Minnesota.

Response: The decision to select natural attenuation as one part of the remedial activities at the Oak Grove Sanitary Landfill in Anoka County, Minnesota was based on several factors such as difficulty in capturing the plume and cost effectiveness. At the Woodstock site, groundwater treatment is practical and cost effective.
It is crucial to emphasize that the rationale for applying natural attenuation at the Oak Grove site has several key elements that differ from the PRPs preference for Alternative 4 at the Woodstock Municipal Landfill. The key elements that differ are as follows:

* Active groundwater remediation was preferred and will be considered short of the five year review period. In the Consent Decree for the Oak Grove site, it was stated that further review of the natural attenuation remedy will be conducted after completion of the cover system and completion of the monitoring network.

* Alternate control mechanisms are being used at the Oak Grove site including a 60 mil membrane layer which is expected to halt further leachate generation.

* Aquifer conditions differ significantly, including horizontal extent of contamination.

APPENDIX III

DATA TABLES

MONITORING WELLS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GWB01-01 11/02/90		WK-GWB02-02 02/06/91		WK-GWFB01-01 10/31/90		WK-GWFB02-01 11/02/90		WK-GWFB06-02 02/07/91	
Aluminum (UG/L)	200.	U/	67.	K/	200.	U/	200.	U/	50.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	50.	U/	5.	UNS/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	0.2	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	/	5.	U/	5.	U/
Calcium (UG/L)	1000.	U/	1000.	U/	1000.	U/	1000.	U/	1000.	U/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	50.	U/	10.	U/
Copper (UG/L)	14.	K/U	10.	U/	10.	U/	16.	K/U	10.	U/
Iron (UG/L)	38.	K/	74.	K/	20.	U/	20.	U/	20.	U/
Lead (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	1000.	U/	1000.	U/	1000.	U/	1000.	U/	1000.	U/
Manganese (UG/L)	10.	U/	15.	U/	10.	U/	10.	U/	15.	U/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	100.	U/	100.	U/	100.	U/	100.	U/	110.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	US/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	UN/R	10.	U/
Sodium (UG/L)	2000.	U/	1000.	UN/	2000.	U/	2000.	U/	1000.	UN/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	2.	U/	2.	U/	50.	U/
Zinc (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloride (MG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U*/UJ
Chemical Oxygen Demand (MG/L)			20.	U/					27.	/U
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.07	/	0.02	U/	0.02	U/	0.04	/
Nitrogen, Ammonia (MG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Nitrogen, Total Kjeldahl (MG/L)	0.1	/U	0.1	UN/UJ	0.1	U/	0.29	/	0.1	UN/UJ
Phosphorus, Total (MG/L)	0.02	UN/	0.02	UN/UJ	0.02	UN/	0.02	UN/	0.02	UN/UJ
Sulfate (MG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Total Dissolved Solids (MG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MIL

Parameter	WK-GWFB10-02 04/02/91		WK-GWMW01D-01 10/31/90		WK-GWMW01D-02 02/06/91		WK-GWMW01S-01 10/31/90		WK-GWMW01S-02 02/06/91	
Aluminum (UG/L)	50.	U/	200.	U/	52.	K/U	200.	U/	50.	U/
Antimony (UG/L)	50.	U/	50.	U/	5.	UN/	50.	U/	5.	UN/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	5.9	KS/	6.	K/
Barium (UG/L)	10.	U/	171.	K/	200.	/	218.	/	250.	/
Beryllium (UG/L)	5.	U/	0.2	U/	5.	U/	0.2	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	1000.	U/	126000.	/	125000.	/	93500.	/	83700.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	10.	U/	50.	U/	12.	K/U
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	20.	U/	2370.	/	1180.	/	1340.	/	3160.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	1000.	U/	56000.	/	58400.	/	77300.	/	77200.	/
Manganese (UG/L)	10.	U/	163.	/	174.	/	553.	/	827.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	77.	/	93.	/
Potassium (UG/L)	100.	U/	1800.	K/	2440.	K/	13200.	/	15000.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	UN/R	10.	U/	10.	UN/R	10.	U/
Sodium (UG/L)	2000.	U/	44000.	/	67300.	N/J	65000.	/	58900.	N/J
Thallium (UG/L)	3.	U/	3.	U/	3.	U	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	2.	U/	50.	U/	2.	U/	50.	U/
Zinc (UG/L)	10.	U/	10.	U/	450.	/	10.	U/	49.	/
Cyanide (UG/L)			10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	5.	U/	336.	/	359.	/	668.	/	622.	/
Chloride (MG/L)	1.	U/	142.	/	198.	/	36.	/	29.	/
Chemical Oxygen Demand (MG/L)					20.	U/			52.	/U
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	0.14	N/J	0.32	/	0.52	/	5.62	/	8.65	/
Nitrogen, Total Kjeldahl (MG/L)	0.1	U/	0.19	/U	1.45	N/J	5.61	/	8.34	N/J
Phosphorus, Total (MG/L)	0.02	U/	0.12	N/	1.38	N/J	1.09	N/J	1.08	N/J
Sulfate (MG/L)	5.	U/	97.	/	116.	/	21.	/	27.	/
Total Dissolved Solids (MG/L)	24.	/	696.	/	794.	/	756.	/	704.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02D-02 02/06/91		WK-GWMW02S-01 10/31/90		WK-GWMW02S-02 02/06/91		WK-GWMW02S-91 10/31/90	
Aluminum (UG/L)	200.	U/	50.	U/	200.	/U	50.	U/	200.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	2.4	K/	3.8	KS/	2.7	K/
Barium (UG/L)	138.	K/	139.	K/	308.	/	247.	/	344.	/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	97200.	/	89200.	/	154000.	/	129000.	/	171000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	1180.	/	1250.	/	1070.	/	1290.	/	669.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	54600.	/	54400.	/	77400.	/	69000.	/	85700.	/
Manganese (UG/L)	75.	/	87.	/	900.	/	1090.	/	909.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	1360.	K/	1300.	K/	8360.	/	6290.	/	9340.	/
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	US/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	7760.	/	9600.	N/J	138000.	/	125000.	N/J	165000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	5.2	K/	50.	U/	5.6	K/
Zinc (UG/L)	10.	U/	12.	K/	10.	U/	222.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	413.	/	416.	/	606.	/	644.	/	657.	/
Chloride (MG/L)	4.	/	4.	/	295.	/	239.	/	328.	/
Chemical Oxygen Demand (MG/L)			20.	U/			42.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	0.61	/	0.58	/	3.02	/	3.06	/	2.53	/
Nitrogen, Total Kjeldahl (MG/L)	0.68	/	0.62	N/J	3.51	/	6.12	N/J	5.	/
Phosphorus, Total (MG/L)	0.04	N/	0.15	N/J	0.9	N/J	1.75	N/J	1.79	N/J
Sulfate (MG/L)	83.	/	84.	/	17.	/	21.	/	15.	/
Total Dissolved Solids (MG/L)	512.	/	498.	/	1140.	/	1010.	/	1140.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MIL

Parameter	WK-GWMW03D-01 11/01/90		WK-GWMW03D-02 02/06/91		WK-GWMW03S-01 11/01/90		WK-GWMW03S-02 02/06/91		WK-GWMW04D 01 11/01/90	
Aluminum (UG/L)	200.	U/	57.	K/U	200.	U/	50.	U/	200.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	137.	K/	138.	K/	110.	K/	83.	K/	254.	/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	131000.	/	124000.	/	119000.	/	106000.	/	171000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	1040.	/	1740.	/	20.	U/	20.	U/	1870.	/
Lead (UG/L)	3.	US/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	63300.	/	64800.	/	49200.	/	47400.	/	78300.	/
Manganese (UG/L)	48.	/	54.	/	451.	/	310.	/	529.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	K/	20.	U/	27.	K/	20.	U/	20.	U/
Potassium (UG/L)	1240.	K/	1150.	K/	860.	K/	510.	K/U	2500.	K/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	7790.	/	8400.	N/J	18200.	/	17600.	N/J	57700.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	2.	U/	50.	U/	2.	U/
Zinc (UG/L)	10.	U/	15.	K/	10.	U/	52.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	438.	/	494.	/	428.	/	417.	/	650.	/
Chloride (MG/L)	4.	/	8.	*/J	15.	/	25.	*/J	119.	/
Chemical Oxygen Demand (MG/L)			20.	U/			20.	U/		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.04	U/
Nitrogen, Ammonia (MG/L)	0.55	/	0.43	/	0.24	/	0.31	/	3.6	/
Nitrogen, Total Kjeldahl (MG/L)	0.96	/U	0.57	N/J	10.4	/	5.97	N/J	7.08	/
Phosphorus, Total (MG/L)	0.74	N/	0.26	N/J	3.23	N/	2.55	N/J	2.5	N/
Sulfate (MG/L)	180.	/	170.	/	92.	/	90.	/	102.	/
Total Dissolved Solids (MG/L)	672.	/	652.	/	562.	/	518.	/	978.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MIL

Parameter	WK-GWMW04D-02 02/07/91		WK-GWMW04D-92 02/07/91		WK-GWMW04S-01 11/01/90		WK-GWMW04S-02 02/07/91		WK-GWMW05D-01 11/01/90	
Aluminum (UG/L)	50.	U/	50.	U/	200.	U/	59.	K/U	200.	U/
Antimony (UG/L)	5.	UN/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	6.2	K/	9.6	KS/	4.2	K/
Barium (UG/L)	210.	/	204.	/	171.	K/	150.	K/	219.	/
Beryllium (UG/L)	5.	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	161000.	/	161000.	/	132000.	/	123000.	/	111000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	13.	K/U
Iron (UG/L)	2770.	/	2570.	/	12600.	/	12300.	/	492.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	79000.	/	79100.	/	31100.	/	31700.	/	62700.	/
Manganese (UG/L)	422.	/	422.	/	598.	/	615.	/	85.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2180.	K/	2140.	K/	3630.	K/	3570.	K/	2360.	K/
Selenium (UG/L)	2.	US/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	62800.	N/J	62200.	N/J	77800.	/	88900.	N/J	26000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	2.	U/	50.	U/	2.	U/
Zinc (UG/L)	14.	K/	10.	U/	10.	U/	326.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	712.	/	614.	/	619.	/	535.	/	485.	/
Chloride (MG/L)	140.	*/J	138.	*/J	49.	/	49.	*/J	31.	/
Chemical Oxygen Demand (MG/L)	45.	/U	42.	/U			117.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.08	/U	0.02	U/
Nitrogen, Ammonia (MG/L)	3.1	/	4.44	/	2.9	/	2.39	/	1.82	/
Nitrogen, Total Kjeldahl (MG/L)	7.02	N/J	7.	N/J	15.1	/	11.7	N/J	1.75	/
Phosphorus, Total (MG/L)	1.65	N/J	1.93	N/J	0.48	N/	0.39	N/J	0.05	N/
Sulfate (MG/L)	108.	/	106.	/	36.	/	64.	/	77.	/
Total Dissolved Solids (MG/L)	968.	/	972.	/	812.	/	772.	/	624.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW05D-02 02/06/91		WK-GWMW05D-91 11/01/90		WK-GWMW05S-01 11/01/90		WK-GWMW05S-02 02/05/91		WK-GWMW06D-01 11/02/90	
Aluminum (UG/L)	50.	U/	200.	U/	200.	U/	50.	U/	200.	U/
Antimony (UG/L)	5.	UN/	50.	U/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.9	K/	4.4	K/	4.3	K/	6.1	KS/	2.	U/
Barium (UG/L)	235.	/	229.	/	344.	/	311.	/	333.	/
Beryllium (UG/L)	5.	U/	0.2	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	103000.	/	110000.	/	170000.	/	167000.	/	153000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	K/U	10.	U/	10.	U/	10.	U/
Iron (UG/L)	373.	/	434.	/	11800.	/	12800.	/	8230.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	US/
Magnesium (UG/L)	60900.	/	62400.	/	86600.	/	81900.	/	57700.	/
Manganese (UG/L)	67.	/	84.	/	258.	/	202.	/	403.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	3130.	K/	2090.	K/	36800.	/	31800.	K/	1820.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	US/	2.	US/
Silver (UG/L)	10.	U/	10.	UN/R	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	32300.	N/J	30100.	/	70300.	/	60200.	N/J	28100.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	2.	U/	3.7	K/	50.	U/	2.	U/
Zinc (UG/L)	564.	/	10.	U/	10.	K/	64.	/	10.	U/
Cyanide (UG/L)	13.	/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	496.	/	484.	/	973.	/	902.	/	293.	/
Chloride (MG/L)	28.	/	31.	/	67.	/	50.	/	220.	/
Chemical Oxygen Demand (MG/L)	20.	U/					45.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.48	/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	1.69	/	1.78	/	17.6	/	13.8	/	1.98	/
Nitrogen, Total Kjeldahl (MG/L)	3.53	N/J	1.76	/	18.2	/	14.6	N/J	2.12	/
Phosphorus, Total (MG/L)	0.17	N/J	0.02	UN/	1.65	N/	0.62	N/J	0.07	N/
Sulfate (MG/L)	83.	/	78.	/	25.	/	43.	/	118.	/
Total Dissolved Solids (MG/L)	1820.	/	624.	/	1080.	/	988.	/	774.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MIL

Parameter	WK-GWMW06D-02 02/05/91		WK-GWMW06S-01 11/02/90		WK-GWMW06S-02 02/05/91		WK-GWMW07-01 02/06/91		WK-GWMW07 02 04/02/91	
Aluminum (UG/L)	50.	U/	200.	U/	50.	U/	57.	K/U	51.5	K/
Antimony (UG/L)	5.	UN/	50.	U/	5.	UN/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	US/	2.	US/	2.	US/	11.	/	19.2	/
Barium (UG/L)	337.	/	174.	K/	213.	/	521.	/	509.	/
Beryllium (UG/L)	5.	U/	0.2	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	160000.	/	75800.	/	95800.	/	214000.	/	223000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	14.	K/U	10.	U/	10.	U/	10.	U/
Iron (UG/L)	5330.	/	20.	U/	32.	K/U	11800.	/	17400.	/
Lead (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	US/
Magnesium (UG/L)	65500.	/	24700.	/	32400.	/	111000.	/	116000.	/
Manganese (UG/L)	391.	/	92.	/	206.	/	507.	/	597.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	21.	K/	47.	/	30.5	K/
Potassium (UG/L)	3050.	K/	2560.	K/	3170.	K/	8640.	/	8920.	/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	US/	2.	US/
Silver (UG/L)	10.	U/	10.	UN/R	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	35500.	N/J	183000.	/	175000.	N/	93700.	N/J	77500.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	US/
Vanadium (UG/L)	50.	U/	2.	US/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	1750.	/	10.	U/	78.	/	37.	/	65.5	/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/		
Alkalinity, Total (MG/L)	303.	/	434.	/	414.	/	769.	/	985.	/
Chloride (MG/L)	228.	/	150.	/	149.	/	118.	/	109.	/
Chemical Oxygen Demand (MG/L)	20.	U/			20.	U/	60.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.21	/U	2.87	/	5.09	/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	2.11	/	0.1	U/	0.15	/	6.47	/	8.96	N/J
Nitrogen, Total Kjeldahl (MG/L)	3.5	N/J	3.02	/	1.74	N/J	8.6	N/J	9.03	/
Phosphorus, Total (MG/L)	0.8	N/J	3.79	N/	0.82	N/J	0.77	N/J	1.38	/
Sulfate (MG/L)	111.	/	80.	/	80.	/	114.	/	102.	/
Total Dissolved Solids (MG/L)	764.	/	816.	/	828.	/	1300.	/	1340.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW08-01 02/11/91		WK-GWMW08-02 04/02/91		WK-GWMW09-01 02/11/91		WK-GWMW09-02 04/01/91		WK-GWMW09-91 02/11/91	
Aluminum (UG/L)	50.	U/	50.	U/	50.	U/	68.	K/	50.	U/
Antimony (UG/L)	5.1	KN/J	50.	U/	5.	UN/	50.	U/	6.8	KN/J
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	220.	/	221.	/	348.	/	299.	/	347	/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	185000.	/	188000.	/	114000.	/	121000.	/	114000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	K/U	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	5550.	/	5040.	/	5140.	/	3130.	/	5090.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	102000.	/	104000.	/	47900.	/	48900.	/	47600.	/
Manganese (UG/L)	92.	/	92.	/	69.	/	77.5	/	68.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	33.	K/	25.	K/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2720.	K/	2350.	K/	2370.	K/	2740.	K/	2390.	K/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	70300.	N/J	67800.	/	84700.	N/J	84600.	/	84200.	N/J
Thallium (UG/L)	3.	U/	3.	US/	3.	U/	3.	US/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	37.	/	16.	K/	25.	/	41.5	/	30.	/
Cyanide (UG/L)	10.	U/			10.	U/			10.	U/
Alkalinity, Total (MG/L)	862.	/	868.	/	588.	/	565.	/	570.	/
Chloride (MG/L)	166.	*/J	151.	/	117.	*/J	119.	/	118.	*/J
Chemical Oxygen Demand (MG/L)	45.	/U			20.	U/			20.	U/
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	/U	0.02	U/	0.03	/U
Nitrogen, Ammonia (MG/L)	1.04	/	1.1	N/J	5.21	/	3.86	N/J	4.23	/
Nitrogen, Total Kjeldahl (MG/L)	1.95	N/J	3.74	/	7.73	N/J	5.54	/	7.55	N/J
Phosphorus, Total (MG/L)	0.39	N/J	1.98	/	0.31	N/J	0.65	/	0.29	N/J
Sulfate (MG/L)	34.	/	35.	/	32.	/	38.	/	31.	/
Total Dissolved Solids (MG/L)	1120.	/	1080.	/	740.	/	776.	/	740.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MIL

Parameter	WK-GWMW09-92 04/01/91		WK-GWMW10-01 02/07/91		WK-GWMW10-02 04/01/91	
Aluminum (UG/L)	50.	K/	81.	K/U	72.	K/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	6.3	K/	6.1	K/
Barium (UG/L)	312.	/	192.	K/	166.	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	118000.	/	192000.	/	165000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/
Iron (UG/L)	4790.	/	19400.	/	13400.	/
Lead (UG/L)	3.	U/	3.	US/	3.	U/
Magnesium (UG/L)	49300.	/	53200.	/	46300.	/
Manganese (UG/L)	69.5	/	708.	/	658.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2340.	K/	1260.	K/	1470.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	81700.	/	19100.	N/	20000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	10.	K/	140.	/	38.5	/
Cyanide (UG/L)			10.	U/		
Alkalinity, Total (MG/L)	556.	/	899.	/	606.	/
Chloride (MG/L)	113.	/	32.	*/J	24.	/
Chemical Oxygen Demand (MG/L)			157.	/		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.04	U/
Nitrogen, Ammonia (MG/L)	3.95	N/J	3.28	/	3.67	N/J
Nitrogen, Total Kjeldahl (MG/L)	6.09	/	7.24	N/J	9.5	/
Phosphorus, Total (MG/L)	1.18	/	0.51	N/J	0.96	/
Sulfate (MG/L)	31.	/	51.	/	46.	/
Total Dissolved Solids (MG/L)	774.	/	916.	/	794.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWB01-01 11/02/90		WK-GWB02-02 02/06/91		WK-GWF01-01 10/31/90		WK-GWF01-01 12/12/90		WK-GWF02-01 11/02/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	/	5.	U/	5.	U/	5.	U/	2.	J/
Acetone (UG/L)	11.	U/	10.	U/	10.	U/	14.	B/UJ	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	2.	J/	1.	J/	2.	J/	5.	U/	1.	J/
1,2-Dichloroethane (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	1.	J/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	18.	/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	2.	J/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qu ; /Data Validation Qualifier) to the rig(the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWFB06-02 02/07/91		WK-GWFB08-02 02/11/91		WK-GWFB10-02 04/02/91		WK-GWMW01D-01 12/12/90		WK-GWMW01D-02 02/06/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	U/	6.	U/	28.	B/U	5.	U/	7.	U/
Acetone (UG/L)	10.	U/	9.	J/	10.	U/	10.	B/U	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW01S-01 10/31/90		WK-GWMW01S-02 02/06/91		WK-GWMW02D-01 12/12/90		WK-GWMW02D-02 02/06/91		WK-GWMW02S-01 10/31/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	9.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	B/U	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	..	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW02S-02 02/06/91		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03D-02 02/06/91		WK-GWMW03S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW03S-02 02/06/91		WK-GWMW04D-01 11/01/90		WK-GWMW04D-02 02/07/91		WK-GWMW04D-92 02/07/91		WK-GWMW04S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	16.	/	21.	/	14.	/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	6.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW04S-02 02/07/91		WK-GWMW05D-01 12/12/90		WK-GWMW05D-02 02/06/91		WK-GWMW05D-91 12/12/90		WK-GWMW05S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	11.	U/	5.	U/	5.	U/	6.	B/U	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	7.	J/U	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	4.	J/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

.U Type: VOC

r	WK-GWMW05S-02 02/05/91		WK-GWMW06D-01 12/12/90		WK-GWMW06D-02 02/05/91		WK-GWMW06S-01 11/02/90		WK-GWMW06S 02 02/05/91	
ethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
thane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
hloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
ethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/UJ	5.	/U
ene chloride (UG/L)	10.	U/	10.	U/	9.	J/U	10.	U/	11.	U/
e (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
ichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
ichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
ichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
oform (UG/L)	5.	U/	10.	U/	5.	U/	10.	U/	10.	U/
)ichloroethane (UG/L)	10.	U/	5.	U/	5.	U/	5.	U/	5.	U/
tenone (UG/L)	5.	U/	5.	U/	10.	U/	5.	U/	5.	U/
1-Trichloroethane (UG/L)	5.	U/	10.	U/	5.	U/	10.	U/	10.	U/
on tetrachloride (UG/L)	10.	U/	5.	U/	5.	U/	5.	U/	5.	U/
l acetate (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
modichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
ichloroethene (UG/L)	5.	U/	5.	U/	2.	J/	5.	U/	5.	U/
bromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Trichloroethane (UG/L)	3.	J/	5.	U/	5.	U/	5.	U/	5.	U/
enzene (UG/L)	5.	U/	5.	U/	10.	U/	10.	U/	10.	U/
rans-1,3-Dichloropropene (UG/L)	5.	U/	10.	U/	10.	U/	10.	U/	10.	U/
romoform (UG/L)	10.	U/	10.	U/	5.	U/	5.	U/	5.	U/
-Methyl-2-pentanone (UG/L)	10.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Hexanone (UG/L)	5.	U/	5.	U/	3.	J/	5.	U/	5.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/						
Ethylbenzene (UG/L)	5.	U/								
Styrene (UG/L)										
Xylenes (total) (UG/L)										

...fier/Data Validation Qualifier) to the ri(...f the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW07 01 02/06/91		WK-GWMW07-02 04/02/91		WK-GWMW08-01 02/11/91		WK-GWMW08 02 04/02/91		WK GWMW09 01 02/11/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	21.	/	20.	/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	18.	B/U	6.	U/	35.	/U	5.	U/
Acetone (UG/L)	5.	J/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	2.	J/	3.	J/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	4.	J/	4.	J/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

u Type: VOC

r	WK-GWMW09-02 04/01/91		WK-GWMW09-91 02/11/91		WK-GWMW09-92 04/01/91		WK-GWMW10-01 02/07/91		WK-GWMW10 02 04/01/91	
thane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
hane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
loride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
thane (UG/L)	17.	B/U	10.	U/	10.	U/	10.	U/	12.	B/U
ne chloride (UG/L)	10.	U/	5.	U/	17.	B/U	5.	U/	10.	U/
(UG/L)	5.	U/	10.	U/	10.	U/	10.	/U	5.	U/
disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
chloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
chloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
chloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
oform (UG/L)	5.	U/	10.	U/	5.	U/	5.	U/	10.	U/
ichloroethane (UG/L)	10.	U/	5.	U/	5.	U/	10.	U/	5.	U/
anone (UG/L)	5.	U/	5.	U/	10.	U/	5.	U/	5.	U/
-Trichloroethene (UG/L)	5.	U/	10.	U/	5.	U/	5.	U/	5.	U/
n tetrachloride (UG/L)	10.	U/	5.	U/	5.	U/	5.	U/	5.	U/
l acetate (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
odichloromethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
chloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
romochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	10.	U/
nzene (UG/L)	5.	U/	5.	U/	10.	U/	10.	U/	10.	U/
me-1,3-Dichloropropene (UG/L)	5.	U/	10.	U/	10.	U/	5.	U/	5.	U/
omoform (UG/L)	10.	U/	10.	U/	5.	U/	5.	U/	5.	U/
Methyl-2-pentanone (UG/L)	10.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Hexanone (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
etrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
oluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
hlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/		
Ethylbenzene (UG/L)	5.	U/	5.	U/						
Styrene (UG/L)	5.	U/								
Xylenes (total) (UG/L)										

(the value.

mate Validation Qualifier) to the rig

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWTB01-01 10/31/90		WK-GWTB01-01 12/12/90		WK-GWTB02-01 10/31/90		WK-GWTB03-01 11/02/90		WK-GWTB04-02 02/05/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	12.	B/UJ	10.	U/	10.	U/	12.	B/U
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	2.	J/	1.	J/	2.	J/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWTB05-02 02/06/91		WK-GWTB06-02 02/07/91		WK-GWTB08-02 02/11/91		WK-GWTB10-02 04/01/91		WK-GWTB11 02 04/02/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	6.	U/	5.	U/	22.	B/U
Acetone (UG/L)	10.	U/	10.	U/	9.	J/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02S-01 10/31/90		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03S-01 11/01/90	
Phenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	100.	U	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GWB01-01 11/02/90		WK-GWF01-01 10/31/90		WK-GWF02-01 11/02/90		WK-GWW01D 01 10/31/90		WK-GWW01S-01 10/31/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	.0.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	10.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	50.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GAS Type: GSVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GASFB01-01 11/07/90		WK-GASLW03-01 11/07/90		WK-GASLW04-01 11/07/90		WK-GASLW04-91 11/07/90	
Freon 12 (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Chloromethane (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Freon 114 (PPB(V/V))	2.	U/	4.	U/	78.	/	48.	/
Vinyl chloride (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Bromomethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Chloroethane (PPB(V/V))	5.	U/	10.	U/	470.	/	290.	/
Freon 11 (PPB(V/V))	1.	U/	2.	U/	10.	U/	10.	U/
cis-1,2-Dichloroethene (PPB(V/V))	2.	U/	4.	U/	20.	U/	20.	U/
Carbon disulfide (PPB(V/V))	10.	U/	20.	U/	50.	U/	50.	U/
Freon 113 (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Acetone (PPB(V/V))	10.	U/	20.	U/	50.	U/	50.	U/
Methylene chloride (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
trans-1,2-Dichloroethene (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
1,1-Dichloroethane (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Vinyl acetate (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
1,1-Dichloroethene (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
2-Butanone (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Chloroform (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Carbon tetrachloride (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Benzene (PPB(V/V))	3.	U/	6.	U/	220.	/	120.	/
1,2-Dichloroethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Trichloroethene (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
1,2-Dichloropropane (PPB(V/V))	8.	U/	16.	U/	40.	U/	40.	U/
Bromodichloromethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
cis-1,3-Dichloropropene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
4-Methyl-2-pentanone (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Toluene (PPB(V/V))	3.	U/	6.	U/	130.	/	65.	/
trans-1,3-Dichloropropene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,1,2-Trichloroethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Tetrachloroethene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
2-Hexanone (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/
Dibromochloromethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,2-Dibromoethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Chlorobenzene (PPB(V/V))	2.5	U/	5.	U/	120.	/	72.	/
Ethylbenzene (PPB(V/V))	2.5	U/	20.	/	310.	/	190.	/
Xylenes (total) (PPB(V/V))	5.	U/	20.	/	440.	/	290.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GAS Type: GSVOC

Parameter	WK-GASFB01-01 11/07/90		WK-GASLW03-01 11/07/90		WK-GASLW04-01 11/07/90		WK-GASLW04-91 11/07/90	
Styrene (PPB(V/V))	7.	U/	14.	U/	35.	U/	35.	U/
Bromoform (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
1,1,2,2-Tetrachloroethane (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
Benzyl chloride (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
4-Ethyl toluene (PPB(V/V))	4.	U/	8.	U/	160.	/	100.	/
1,3,5-Trimethylbenzene (PPB(V/V))	2.5	U/	5.	U/	70.	/	52.	/
1,2,4-Trimethylbenzene (PPB(V/V))	3.	U/	25.	/	320.	/	200.	/
1,3-Dichlorobenzene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,4-Dichlorobenzene (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
1,2-Dichlorobenzene (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/
1,2,4-Trichlorobenzene (PPB(V/V))	7.	U/	14.	U/	35.	U/	35.	U/
Hexachlorobutadiene (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

LANDFILL GAS

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW04-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Ethane,1,1'-oxybis- (UG/L)	6.	J/
Unknown (UG/L)	6.	J/

WK-LLW05-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexanoic acid (DOT) (UG/L)	14.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	16.	J/
Trimethylbenzene (UG/L)	8.	J/
Benzamide, N,N-diethyl-3-methy (UG/L)	8.	J/
Phenol, bis(dimethylethyl)-met (UG/L)	48.	J/
Unknown (UG/L)	8.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	14.	J/
Benzene, dichloro- (UG/L)	4.	J/
Unknown subst. benzene (UG/L)	10.	J/
Unknown (UG/L)	6.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW02-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Trimethylbenzene (UG/L)	14.	J/
Trimethylbenzene (UG/L)	8.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	12.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	37.	J/
Benzene, trimethyl- (UG/L)	17.	J/
Unknown (UG/L)	16.	J/
Benzene, methylpropyl- (UG/L)	9.	J/
Benzene, ethyldimethyl- (UG/L)	11.	J/
Benzene, ethyldimethyl- (UG/L)	11.	J/
Benzene, tetramethyl- (UG/L)	10.	J/
Unknown (UG/L)	14.	J/
Benzene, tetramethyl- (UG/L)	6.	J/
Naphthalene (UG/L)	17.	J/

WK-LLW02-02 02/07/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	24.	J/JN
Trimethylbenzene (UG/L)	32.	J/JN
2(3H)-benzothiazolone (UG/L)	24.	J/JN
Butoxyethanol phosphate (UG/L)	16.	J/JN

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW02-92 02/07/91

(TBNA) Tentatively-Identified Semi-volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	24.	J/JN
Trimethylbenzene (UG/L)	44.	J/JN
Trimethylbenzene (UG/L)	16.	J/JN
Unknown alkenyl benzene (UG/L)	16.	J/JN
2(3H)-benzothiazolone (UG/L)	28.	J/JN
Ethanol, 2-butoxy-, phosphate (UG/L)	28.	J/JN

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Propyl benzene (UG/L)	8.	J/JN

WK-LLW03-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzamide, N,N-diethyl-3-methy (UG/L)	16.	J/
Hexadecanoic acid (UG/L)	14.	J/
Hexanedioic acid, mono(2-ethyl (UG/L)	8.	J/

WK-LLW03-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	3.	J/

WK-LLW04-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexanoic acid, 2-methyl- (UG/L)	16.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
Dibenzofuran (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	100.	U/	100.	U/	3.	J/	50.	U/	50.	U/
Phenanthrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	40.	U/	40.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC
Generated by: CAW
Date Issued: 10-MAY-91

WK-LLW01-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
4-(Tetramethylbutyl)phenol (UG/L)	10.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	9.	J/
Dichlorobenzene (UG/L)	3.	J/
Benzene, trimethyl- (UG/L)	3.	J/
1H-indene, dihydro- (UG/L)	7.	J/
Ethyldimethylbenzene (UG/L)	3.	J/
Ethyldimethylbenzene (UG/L)	6.	J/
Benzene, tetramethyl- (UG/L)	3.	J/
Ethyldimethylbenzene (UG/L)	6.	J/
Ethyldimethylbenzene+unknown (UG/L)	8.	J/

WK-LLW01-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, propyl- (UG/L)	4.	J/

WK-LLW01-91 08/08/90

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	9.	J/
Benzene, propenyl- (UG/L)	7.	J/
Benzene, ethyldimethyl- (UG/L)	6.	J/
Benzene, tetramethyl- (UG/L)	6.	J/
Unknown subst. benzene (UG/L)	9.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
Phenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	6.	J/	8.	J/	10.	U/	10.	U/	2.	J/
Benzyl Alcohol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	2.	J/
N-Nitroso-di-n-dipropylamine (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	100.	U/	100.	U/	54.	B/J	10.	U/	28.	BJ/J
bis(2-Chloroethoxy)methane (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	26.	/	34.	/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90	
Dibenzofuran (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Diethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Chlorophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Fluorene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
N-nitrosodiphenylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Bromophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Pentachlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Phenanthrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Di-n-butylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Butylbenzylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
3,3'-Dichlorobenzidine (UG/L)	20.	U/	40.	U/	20.	U/	20.	U/	20.	U/R
Benzo(a)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Chrysene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Di-n-octyl Phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(b)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(k)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(a)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Dibenz(a,h)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(g,h,i)perylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW05-01 08/08/90		WK-LLW05-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/
Benzene (UG/L)	11.	/	14.	/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/
Toluene (UG/L)	2.	J/	5.	U/
Chlorobenzene (UG/L)	8.	/	7.	/
Ethylbenzene (UG/L)	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/	2.	J/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90	
Phenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
bis(2-Chloroethyl) ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Chlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,3-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,4-Dichlorobenzene (UG/L)	10.	U/	20.	U/	2.	J/	10.	U/	2.	J/J
Benzyl Alcohol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,2-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachloroethane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Nitrobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Isophorone (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Nitrophenol (UG/L)	10.	U/	[illegible]	U/	10.	U/	10.	U/	10.	U/R
2,4-Dimethylphenol (UG/L)	10.	U/	[illegible]	U/	10.	U/	10.	U/	10.	U/R
Benzoic Acid (UG/L)	50.	U/	[illegible]	U/	50.	U/	50.	U/	50.	U/R
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,2,4-Trichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Naphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	6.	J/J
4-Chloroaniline (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorobutadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Chloro-3-methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Methylnaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorocyclopentadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4,6-Trichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4,5-Trichlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
2-Chloronaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Dimethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Acenaphthylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,6-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
3-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Acenaphthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dinitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
4-Nitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW01 01 08/08/90		WK-LLW01-02 02/08/91		WK-LLW01-91 08/08/90		WK-LLW02 01 08/08/90		WK LLW02 02 02/07/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	16.	/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	9.	/	11.	/	8.	/	8.	/	9.	/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	1.	J/	5.	U/	1.	J/	1.	J/	5.	U/
Chlorobenzene (UG/L)	3.	J/	8.	/	3.	J/	6.	/	8.	/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/	8.	/	2.	J/	5.	/	7.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW02 92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW03-02 02/08/91		WK-LLW04-01 08/08/90		WK-LLW04-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	B/U	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	9.	/	3.	J/	3.	J/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	8.	/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	6.	/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: PPCB

Parameter	WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
alpha-BHC (UG/L)	0.05	U/	0.05	U/
beta-BHC (UG/L)	0.05	U/	0.05	U/
delta-BHC (UG/L)	0.05	U/	0.05	U/
gamma-BHC (Lindane) (UG/L)	0.05	U/	0.05	U/
Heptachlor (UG/L)	0.05	U/	0.05	U/
Aldrin (UG/L)	0.05	U/	0.05	U/
Heptachlor epoxide (UG/L)	0.05	U/	0.05	U/
Endosulfan I (UG/L)	0.05	U/	0.05	U/
Dieldrin (UG/L)	0.1	U/	0.1	U/
4,4'-DDE (UG/L)	0.1	U/	0.1	U/
Endrin (UG/L)	0.1	U/	0.1	U/
Endosulfan II (UG/L)	0.1	U/	0.1	U/
4,4'-DDD (UG/L)	0.1	U/	0.1	U/
Endosulfan sulfate (UG/L)	0.1	U/	0.1	U/
4,4'-DDT (UG/L)	0.1	U/	0.1	U/
Methoxychlor (UG/L)	0.5	U/	0.5	U/
Endrin ketone (UG/L)	0.1	U/	0.1	U/
alpha-Chlordane (UG/L)	0.5	U/	0.5	U/
gamma-Chlordane (UG/L)	0.5	U/	0.5	U/
Toxaphene (UG/L)	1.	U/	1.	U/
Aroclor-1016 (UG/L)	0.5	U/	0.5	U/
Aroclor-1221 (UG/L)	0.5	U/	0.5	U/
Aroclor-1232 (UG/L)	0.5	U/	0.5	U/
Aroclor-1242 (UG/L)	0.5	U/	0.5	U/
Aroclor-1248 (UG/L)	0.5	U/	0.5	U/
Aroclor-1254 (UG/L)	1.	U/	1.	U/
Aroclor-1260 (UG/L)	1.	U/	1.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLTB02-01 08/08/90		WK-LLTB03-01 08/08/90		WK-LLTB07-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	10.	U/	5.	U/	5.	U/	13.	B/U	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qu[illegible]er/Data Validation Qualifier) to the righ[illegible] the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MIL

Parameter	WK-LLW04-01 08/08/90		WK-LLW04-02 02/08/91		WK-LLW05-01 08/08/90		WK-LLW05-02 02/08/91	
Aluminum (UG/L)	174000.	/	97000.	/	167000.	/	358000.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	50.	UN/R	5.	UNS/R
Arsenic (UG/L)	50.	UN/R	76.5	S/	2.	UN/R	2.9	KS/
Barium (UG/L)	2070.	/	1130.	/	4420.	/	2070.	/
Beryllium (UG/L)	9.	/	5.	/	10.	/	23.5	/
Cadmium (UG/L)	21.	N/J	5.	U/	19.	N/J	32.	/
Calcium (UG/L)	1700000.	/	919000.	/	3460000.	/	4390000.	/
Chromium, total (UG/L)	548.	/	250.	/	629.	/	1200.	/
Cobalt (UG/L)	255.	/	117.	/	261.	/	546.	/
Copper (UG/L)	2160.	/	1060.	/	1900.	/	4480.	/
Iron (UG/L)	742000.	/	350000.	/	773000.	/	1560000.	/
Lead (UG/L)	1900.	/	982.	S/	950.	/	3.	U/
Magnesium (UG/L)	881000.	/	405000.	/	654000.	/	1260000.	/
Manganese (UG/L)	15500.	/	6330.	/	19000.	/	31200.	/
Mercury (UG/L)	2.2	/	1.4	/	1.8	/	3.8	/
Nickel (UG/L)	1900.	/	846.	/	3760.	/	5770.	/
Potassium (UG/L)	53000.	/	27300.	/	64300.	/	83400.	/
Selenium (UG/L)	10.	UNS/UJ	3.7	KS/	15.4	NS/J	9.5	S/
Silver (UG/L)	10.	UN/UJ	10.	U*/	12.	N/J	10.	U*/
Sodium (UG/L)	108000.	N/J	115000.	/	66200.	N/J	93500.	/
Thallium (UG/L)	12.4	NS/J	4.2	KS/	12.5	NS/J	5.3	KS/
Vanadium (UG/L)	676.	/	283.	/	576.	/	1180.	/
Zinc (UG/L)	18700.	/	8700.	/	8340.	/	16800.	/
Cyanide (UG/L)	25.	/	10.	U/	58.	/	29.	/
Alkalinity, Total (MG/L)	876.	/J	951.	/	859.	/J	1100.	/
Chloride (MG/L)	121.	/	127.	/	40.	/	34.	/
Chemical Oxygen Demand (MG/L)	2260.	/	99.	/	7830.	/	150.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.2	*/U	0.02	U/	0.15	*/U	0.02	U/
Nitrogen, Ammonia (MG/L)	7.55	/	3.46	/	31.9	/	32.3	/
Nitrogen, Total Kjeldahl (MG/L)	26.2	/J	19.6	/	124.	/J	120.	/
Phosphorus, Total (MG/L)	7.48	/J	5.65	/	12.2	/J	9.4	/
Sulfate (MG/L)	29.	/	31.	N/J	9.	/	34.	N/J
Total Dissolved Solids (MG/L)	1010.	/	1060.	/	904.	/	1052.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: PPCB
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90		WK-LLW03-01 08/08/90	
alpha-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
beta-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
delta-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
gamma-BHC (Lindane) (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	
Heptachlor (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Aldrin (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Heptachlor epoxide (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Endosulfan I (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	
Dieldrin (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDE (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endrin (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endosulfan II (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDD (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endosulfan sulfate (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDT (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Methoxychlor (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Endrin ketone (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
alpha-Chlordane (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
gamma-Chlordane (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Toxaphene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Aroclor-1016 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1221 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1232 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1242 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1248 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1254 (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Aroclor-1260 (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-02 02/08/91		WK-LLW01-91 08/08/90	
Aluminum (UG/L)	50.	U/	50.	U/	283000.	/	95400.	/	170000.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	50.	UN/R	5.	UN/R	50.	UN/R
Arsenic (UG/L)	2.	UN/R	2.	US/	68.8	NS/J	73.7	S/	24.	NS/J
Barium (UG/L)	10.	U/	10.	U/	2600.	/	855.	/	2450.	/
Beryllium (UG/L)	5.	U/	5.	U/	17.	/	5.	/	12.	/
Cadmium (UG/L)	5.	UN/	5.	U/	36.	N/J	6.7	/	35.	N/J
Calcium (UG/L)	1000.	U/	1000.	U/	3020000.	/	993000.	/	2110000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	1100.	/	306.	/	676.	/
Cobalt (UG/L)	10.	U/	10.	U/	415.	/	95.	/	251.	/
Copper (UG/L)	10.	U/	10.	U/	3070.	/	1080.	/	1990.	/
Iron (UG/L)	20.	U/	192.	/	854000.	/	263000.	/	572000.	/
Lead (UG/L)	3.	U/	3.	U/	2030.	/	496.	S/	1220.	/
Magnesium (UG/L)	1000.	U/	1000.	U/	1470000.	/	456000.	/	945000.	/
Manganese (UG/L)	10.	U/	15.	U/	18400.	/	5400.	/	15800.	/
Mercury (UG/L)	0.2	U/	0.2	U/	5.3	/	2.2	/	3.2	/
Nickel (UG/L)	20.	U/	20.	U/	3090.	/	1070.	/	2040.	/
Potassium (UG/L)	100.	U/	100.	U/	62800.	/	23200.	/	47300.	/
Selenium (UG/L)	2.	UN/UJ	2.	US/	20.6	NS/J	20.	US/	10.	NS/J
Silver (UG/L)	10.	UN/UJ	10.	U*/	23.	N/J	20.	*/	17.	N/J
Sodium (UG/L)	1000.	UN/	1000.	U/	18700.	N/J	13000.	/	14600.	N/J
Thallium (UG/L)	3.	UNS/UJ	3.	U/	15.3	NS/J	8.2	KS/	12.9	NS/J
Vanadium (UG/L)	50.	U/	50.	U/	1320.	/	349.	/	928.	/
Zinc (UG/L)	23.	/	10.	U/	31100.	/	13400.	/	20300.	/
Cyanide (UG/L)	10.	U/	10.	U/	60.	/	10.	U/	37.	/
Alkalinity, Total (MG/L)	5.	U/	5.	U/	630.	/J	585.	/	643.	/J
Chloride (MG/L)	1.	U/	1.	U/	8.	/	11.	/	9.	/
Chemical Oxygen Demand (MG/L)	20.	U/	20.	U/	2820.	/	38.	/	3440.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.06	*/	0.07	/	0.26	*/U	0.02	U/	0.17	*/U
Nitrogen, Ammonia (MG/L)	0.1	U/	0.12	/	15.5	/	14.2	/	17.4	/
Nitrogen, Total Kjeldahl (MG/L)	0.1	U/UJ	0.21	/	54.1	/J	19.8	/	60.	/J
Phosphorus, Total (MG/L)	0.02	U/UJ	0.02	U/	10.	/J	0.58	/	10.4	/J
Sulfate (MG/L)	5.	U/	5.	UN/	29.	/	53.	N/J	31.	/
Total Dissolved Solids (MG/L)	20.	U/	20.	U/	612.	/	608.	/	604.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MTL

Parameter	WK-LLW02-01 08/08/90		WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW03-02 02/08/91	
Aluminum (UG/L)	22800.	/	54500.	/	54800.	/	190000.	/	94500.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	5.	UN/R	50.	UN/R	30.	KN/J
Arsenic (UG/L)	55.5	N/J	88.8	S/	89.5	S/	50.	UN/R	102.	S/
Barium (UG/L)	810.	/	1250.	/	1360.	/	10800.	/	5900.	/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	9.	/	5.5	/
Cadmium (UG/L)	5.	UN/	6.3	/	8.2	/	333.	N/J	121.	/
Calcium (UG/L)	476000.	/	768000.	/	913000.	/	3080000.	/	1240000.	/
Chromium, total (UG/L)	86.	/	153.	/	151.	/	1400.	/	799.	/
Cobalt (UG/L)	60.	/	66.	/	62.	/	227.	/	79.	/
Copper (UG/L)	497.	/	1030.	/	972.	/	10800.	/	7120.	/
Iron (UG/L)	262000.	/	485000.	/	501000.	/	946000.	/	454000.	/
Lead (UG/L)	150.	/	330.	S/	429.	S/	18000.	/	12900.	S/
Magnesium (UG/L)	174000.	/	332000.	/	374000.	/	427000.	/	337000.	/
Manganese (UG/L)	7980.	/	15000.	/	16900.	/	26500.	/	13000.	/
Mercury (UG/L)	0.28	/	1.2	/	0.95	/	5.7	/	3.7	/
Nickel (UG/L)	1950.	/	4390.	/	4300.	/	15000.	/	8090.	/
Potassium (UG/L)	28000.	/	26500.	/	26100.	/	177000.	/	135000.	/
Selenium (UG/L)	10.	UNS/UJ	2.	US/	2.	US/	13.5	NS/J	20.	US/
Silver (UG/L)	10.	UN/UJ	10.	U*/	10.	U*/	58.	N/J	29.5	*/
Sodium (UG/L)	22700.	N/J	32100.	/	33300.	/	205000.	N/J	215000.	/
Thallium (UG/L)	5.	KNS/J	6.7	KS/	9.	KS/	8.8	KNS/J	4.4	KS/
Vanadium (UG/L)	108.	/	108.	/	94.	/	503.	/	275.	/
Zinc (UG/L)	8140.	/	17100.	/	16800.	/	105000.	/	93600.	/
Cyanide (UG/L)	20.	/	18.	/	33.	/	50.	/	42.	/
Alkalinity, Total (MG/L)	907.	/J	973.	/	934.	/	1510.	/J	1900.	/
Chloride (MG/L)	29.	/	38.	/	34.	/	156.	/	159.	/
Chemical Oxygen Demand (MG/L)	381.	/	125.	/	117.	/	6970.	/	197.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.18	*/U	0.04	/U	0.02	U/	0.04	U*/	0.02	U/
Nitrogen, Ammonia (MG/L)	24.9	/	25.2	/	28.4	/	27.1	/	51.8	/
Nitrogen, Total Kjeldahl (MG/L)	21.7	/J	36.5	/	41.	/	161.	/J	169.	/
Phosphorus, Total (MG/L)	2.34	/J	5.96	/	6.54	/	23.2	/J	16.1	/
Sulfate (MG/L)	10.	/	43.	N/J	33.	N/J	37.	/	35.	N/J
Total Dissolved Solids (MG/L)	924.	/	918.	/	904.	/	1630.	/	1570.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

LEACHATE WELLS

WARZYN

LABORATORY RESULTS
VOLATILE ORGANIC REPORT

Project: Woodstock Landfill

Project #: 60776.34

Location: Woodstock, Illinois

Date Sampled: 7/19/91

Compound	Method Detection Limits (ug/L)	3006-001 SB4	3006-002 SB2	3006-003 SB1	3006-004 SB3	3006-005 SB5
Benzene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
m- and p-Xylene	2.00	<2.00	<2.00	<2.00	<2.00	<2.00
o-Xylene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Method Reference: EPA-600, "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewaters", July 1982, Method 602.

Ck'd: RK App'd: ECH
Date Issued: 7-23-91

WI Lab Certification ID#: 113135500
[var-/ul-040]
60775.34-lab

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SBMW01D-08.5 07/27/90		WK-SBMW01D-41 07/30/90		WK-SBMW02-43 08/03/90		WK-SBMW02-60 08/03/90		WK-SBMW03-06 08/06/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	0.	U/	3.95	/	0.	U/	0.	U/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND

Parameter	WK-SBMW04-13.5 08/10/90		WK-SBMW05-22 08/01/90		WK-SBMW06-08.5 07/31/90		WK-SBMW06-33.5 07/31/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	140.	/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	5.88	/	0.	U/	0.	U/

Note: (1) Results are reported with qualifiers (Laboratory C[illegible]ier/Data Validation Qualifier) to the (of the value.

AQUIFER MATRIX

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS

WX-SS02-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown oxygenated alkane (UG/KG)	670.	J/NJ
Unknown oxygenated alkane (UG/KG)	470.	J/NJ
Hexadecanoic acid (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	430.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	1700.	J/NJ
Unknown hydrocarbon (UG/KG)	390.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	3600.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	2500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	23000.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	510.	J/NJ
Unknown hydrocarbon (UG/KG)	2100.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	2000.	J/NJ
Unknown (UG/KG)	780.	J/NJ
Unknown (UG/KG)	940.	J/NJ
Unknown (UG/KG)	1100.	J/NJ
Unknown hydrocarbon (UG/KG)	820.	J/NJ
Unknown (UG/KG)	670.	J/NJ
Unknown (UG/KG)	3100.	J/NJ

WX-SS02-91 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown oxygenated alkane (UG/KG)	720.	J/NJ
Hexadecanoic acid (UG/KG)	540.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1200.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	2800.	J/NJ
Unknown (UG/KG)	860.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	810.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	7800.	J/NJ
Unknown (UG/KG)	630.	J/NJ
Unknown (UG/KG)	500.	J/NJ
Unknown hydrocarbon (UG/KG)	1400.	J/NJ
Unknown hydrocarbon (UG/KG)	1700.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	1300.	J/NJ
Unknown hydrocarbon (UG/KG)	900.	J/NJ
Unknown (UG/KG)	990.	J/NJ
Unknown (UG/KG)	810.	J/NJ
Unknown (UG/KG)	3500.	J/NJ
Unknown (UG/KG)	500.	J/NJ
Unknown (UG/KG)	720.	J/NJ

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

atrix: SS

-SS03-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexadecanoic acid (UG/KG)	1300.	J/NJ
Unknown chlorinated hydrocarbo (UG/KG)	1100.	J/NJ
Unknown substituted alkane (UG/KG)	2300.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2200.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	2700.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown (UG/KG)	1600.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1600.	J/NJ
Unknown (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	5000.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown hydrocarbon (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2600.	J/NJ
Unknown (UG/KG)	3100.	J/NJ
Unknown (UG/KG)	2600.	J/NJ
Unknown (UG/KG)	2800.	J/NJ

-SS04-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	800.	J/NJ
Unknown (UG/KG)	930.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	720.	BJ/NJ
Unknown (UG/KG)	1700.	J/NJ
Unknown (UG/KG)	11000.	J/NJ
Unknown (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	1100.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	670.	J/NJ
Unknown (UG/KG)	970.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
own hydrocarbon (UG/KG)	970.	J/NJ
own (UG/K	2400.	J/NJ
Unknown (UG/K	890.	J/NJ
Unknown (UG/KG)	4600.	J/NJ
Unknown (UG/KG)	1600.	J/NJ
Unknown (UG/KG)	510.	J/NJ

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SVOC

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Dibenzofuran (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dinitrotoluene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Diethylphthalate (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chlorophenyl-phenylether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Fluorene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
N-nitrosodiphenylamine (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Bromophenyl-phenylether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Pentachlorophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Phenanthrene (UG/KG)	58.	J/	390.	U/	450.	U/	79.	J/	420.	U/
Anthracene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Di-n-butylphthalate (UG/KG)	210.	J/	61.	J/	99.	J/	240.	J/	90.	J/
Fluoranthene (UG/KG)	130.	J/	43.	J/	59.	J/	220.	J/	61.	J/
Pyrene (UG/KG)	94.	J/	52.	J/	63.	J/	260.	J/	420.	U/
Butylbenzylphthalate (UG/KG)	65.	J/	390.	U/	450.	U/	290.	J/	420.	U/
3,3'-Dichlorobenzidine (UG/KG)	900.	U/	780.	U/	890.	U/	900.	U/	840.	U/
Benzo(a)anthracene (UG/KG)	73.	J/	390.	U/	450.	U/	160.	J/	420.	U/
Chrysene (UG/KG)	93.	J/	390.	U/	450.	U/	180.	J/	420.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	450.	U/	390.	U/	450.	U/	1800.	B/U	420.	U/
Di-n-octyl Phthalate (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzo(b)fluoranthene (UG/KG)	300.	JX/	390.	U/	450.	U/	690.	X/	420.	U/
Benzo(k)fluoranthene (UG/KG)	300.	JX/	390.	U/	450.	U/	690.	X/	420.	U/
Benzo(a)pyrene (UG/KG)	99.	J/	40.	J/	450.	U/	170.	J/	420.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	450.	U/	390.	U/	450.	U/	100.	J/	420.	U/
Dibenz(a,h)anthracene (UG/KG)	450.	U/	390.	U/	450.	U/	48.	J/	420.	U/
Benzo(g,h,i)perylene (UG/KG)	52.	J/	390.	U/	450.	U/	110.	J/	420.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS
Generated by: CAW
Date Issued: 01-OCT-91

K-SS01-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LG/DVG
Unknown (UG/KG)	640.	JN/NJ
Hexadecanoic acid (UG/KG)	730.	J/NJ
Unknown amine (UG/KG)	1800.	J/NJ
Unknown (UG/KG)	590.	J/NJ
Unknown (UG/KG)	550.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	1300.	J/NJ
Unknown (UG/KG)	730.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown hydrocarbon (UG/KG)	2800.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown hydrocarbon (UG/KG)	1300.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1800.	J/NJ
Unknown (UG/KG)	1000.	J/NJ
Unknown (UG/KG)	780.	J/NJ
Unknown (UG/KG)	1300.	J/NJ
Unknown (UG/KG)	2200.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	550.	J/NJ

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SLUD MTL
Generated by: CAW
Date Issued: 01-OCT-91

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Aluminum (MG/KG)	10500.	/	4320.	/	4340.	/	17000.	/	6610.	/
Antimony (MG/KG)	12.	UN/UJ	11.4	UN/UJ	11.5	UN/UJ	10.8	UN/UJ	8.8	UN/UJ
Arsenic (MG/KG)	3.9	S/	4.8	S/	3.8	S/	5.1	S/	3.3	S/
Barium (MG/KG)	209.	/	45.6	K/	40.4	K/	412.	/	64.4	/
Beryllium (MG/KG)	1.2	U/	1.1	U/	1.1	U/	1.1	U/	0.88	U/
Cadmium (MG/KG)	1.3	/	1.1	U/	1.1	U/	2.3	/	0.88	U/
Calcium (MG/KG)	51900.	/	68700.	/	39000.	/	47600.	/	57000.	/
Chromium, total (MG/KG)	75.1	/	5.8	/	7.	/	63.1	/	9.8	/
Cobalt (MG/KG)	3.4	K/	2.9	K/	3.4	K/	6.4	K/	4.7	K/
Copper (MG/KG)	283.	/	17.1	/	16.7	/	589.	/	18.2	/
Iron (MG/KG)	18400.	/	12100.	/	11100.	/	24400.	/	12200.	/
Lead (MG/KG)	44.9	*/J	28.7	*/J	19.9	*/J	73.6	S*/J	17.4	*/J
Magnesium (MG/KG)	24900.	/	34000.	/	18800.	/	18900.	/	30100.	/
Manganese (MG/KG)	395.	/	445.	/	280.	/	793.	/	447.	/
Mercury (MG/KG)	2.2	*/J	0.12	*/J	0.09	*/J	1.9	*/J	0.07	*/J
Nickel (MG/KG)	27.7	/	13.	/	11.6	/	51.5	/	16.8	/
Potassium (MG/KG)	1020.	K/	654.	K/	723.	K/	1770.	/	881.	/
Selenium (MG/KG)	0.93	KS/	0.49	US/	0.92	KS/	1.9	S/	0.41	US/
Silver (MG/KG)	8.1	/	2.3	U/	2.3	U/	10.3	/	1.8	U/
Sodium (MG/KG)	481.	U/	457.	U/	459.	U/	1000.	K/	352.	U/
Thallium (MG/KG)	0.64	U/	0.73	U/	0.57	U/	0.61	U/	0.61	U/
Vanadium (MG/KG)	12.	U/	11.4	U/	11.5	U/	10.8	U/	15.5	/
Zinc (MG/KG)	441.	/	59.1	/	61.	/	688.	/	54.6	/
Total Solids (%)	73.7	/	71.8	/	75.2	/	76.4	/	82.7	/

(Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SVOC
Generated by: CAW
Date Issued: 01-OCT-91

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Phenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
bis(2-Chloroethyl) ether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Chlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,3-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,4-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzyl alcohol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,2-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachloroethane (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Nitrobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Isophorone (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Nitrophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dimethylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzoic acid (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
bis(2-Chloroethoxy)methane (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dichlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,2,4-Trichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Naphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chloroaniline (UG/KG)	200.	J/	390.	U/	450.	U/	140.	J/	420.	U/
Hexachlorobutadiene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chloro-3-methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Methylnaphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachlorocyclopentadiene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4,6-Trichlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4,5-Trichlorophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
2-Chloronaphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Dimethylphthalate (UG/KG)	450.	U/	390.	U/	450.	U/	100.	J/	420.	U/
Acenaphthylene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,6-Dinitrotoluene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
3-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Acenaphthene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dinitrophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
4-Nitrophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/

...modifier (Data Validation Qualifier) to the right of the value.

SURFACE SOIL

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP
Generated By: CAA
Date Issued: 02-OCT-91

SK-TP03-06 07/24/91

(TSNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
3-Cyclohexene-1-methanol, .alp (UG/KG)	1600000.	J/JN
PCB (UG/KG)	5000000.	J/JN
PCB (UG/KG)	1800000.	J/JN
PCB (UG/KG)	2900000.	J/JN
PCB (UG/KG)	4100000.	J/JN
PCB (UG/KG)	7200000.	J/JN
PCB (UG/KG)	1400000.	J/JN
PCB (UG/KG)	3500000.	J/JN
PCB (UG/KG)	4400000.	J/JN
PCB (UG/KG)	1600000.	J/JN
PCB (UG/KG)	5100000.	J/JN
PCB (UG/KG)	1900000.	J/JN
PCB (UG/KG)	2400000.	J/JN
PCB (UG/KG)	3700000.	J/JN
Methylphenylester (UG/KG)	1700000.	J/JN
Unknown (UG/KG)	2400000.	J/JN
Unknown (UG/KG)	2900000.	J/JN
Unknown (UG/KG)	3400000.	J/JN
Unknown (UG/KG)	3100000.	J/JN
Unknown (UG/KG)	2300000.	J/JN

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP

WK-TP03-06SUP 07/24/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LC/DVQ
PCB (UG/KG)	3000000.	J/JN
PCB (UG/KG)	960000.	J/JN
PCB (UG/KG)	1500000.	J/JN
PCB (UG/KG)	3000000.	J/JN
PCB (UG/KG)	8100000.	J/JN
PCB (UG/KG)	2000000.	J/JN
PCB (UG/KG)	1400000.	J/JN
PCB (UG/KG)	3600000.	J/JN
PCB (UG/KG)	5100000.	J/JN
PCB (UG/KG)	1200000.	J/JN
PCB (UG/KG)	5700000.	J/JN
PCB (UG/KG)	1800000.	J/JN
PCB (UG/KG)	2500000.	J/JN
PCB (UG/KG)	3600000.	J/JN
Tris(methylphenyl)esterphospho (UG/KG)	1300000.	J/JN
Unknown (UG/KG)	1900000.	J/JN
Unknown (UG/KG)	2300000.	J/JN
Unknown (UG/KG)	2900000.	J/JN
Unknown (UG/KG)	1700000.	J/JN
Unknown (UG/KG)	1000000.	J/JN

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: PPCB
Generated by: CAW
Date Issued: 02-OCT-91

Parameter,	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
alpha-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
beta-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
delta-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
gamma-BHC (Lindane) (MG/KG)	12.	U/UJ	10.	U/UJ
Heptachlor (MG/KG)	12.	U/UJ	10.	U/UJ
Aldrin (MG/KG)	12.	U/UJ	10.	U/UJ
Heptachlor epoxide (MG/KG)	12.	U/UJ	10.	U/UJ
Endosulfan I (MG/KG)	12.	U/UJ	10.	U/UJ
Dieldrin (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDE (MG/KG)	24.	U/UJ	20.	U/UJ
Endrin (MG/KG)	24.	U/UJ	20.	U/UJ
Endosulfan II (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDD (MG/KG)	24.	U/UJ	20.	U/UJ
Endosulfan sulfate (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDT (MG/KG)	24.	U/UJ	20.	U/UJ
Methoxychlor (MG/KG)	160.	U/UJ	130.	U/UJ
Endrin ketone (MG/KG)	24.	U/UJ	20.	U/UJ
alpha-Chlordane (MG/KG)	120.	U/UJ	100.	U/UJ
gamma-Chlordane (MG/KG)	120.	U/UJ	100.	U/UJ
Toxaphene (MG/KG)	240.	U/UJ	200.	U/UJ
Aroclor-1016 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1221 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1232 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1242 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1248 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1254 (MG/KG)	140000.	C/J	120000.	C/J
Aroclor-1260 (MG/KG)	240.	U/UJ	200.	U/UJ

[illegible] (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SLIND MIL
Generated by: CAU
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Aluminum (MG/KG)	31.3	U/	31.2	U/
Antimony (MG/KG)	31.3	U/	31.2	U/
Arsenic (MG/KG)	1.3	U/	1.2	U/
Barium (MG/KG)	6.3	U/	6.2	U/
Beryllium (MG/KG)	3.1	U/	3.1	U/
Cadmium (MG/KG)	3.1	U/	3.1	U/
Calcium (MG/KG)	626.	U/	624.	U/
Chromium, total (MG/KG)	6.3	U/	6.2	U/
Cobalt (MG/KG)	6.3	U/	6.2	U/
Copper (MG/KG)	6.3	U/	6.2	U/
Iron (MG/KG)	20.	K/	29.3	K/
Lead (MG/KG)	1.9	U/	1.9	U/
Magnesium (MG/KG)	626.	U/	624.	U/
Manganese (MG/KG)	6.3	U/	6.2	U/
Mercury (MG/KG)	0.15	*/	0.12	U*/
Nickel (MG/KG)	12.5	U/	12.5	U/
Potassium (MG/KG)	62.6	U/	62.4	U/
Selenium (MG/KG)	1.3	U/	1.2	U/
Silver (MG/KG)	6.3	U/	6.2	U/
Sodium (MG/KG)	1250.	U/	1250.	U/
Thallium (MG/KG)	1.9	U/	1.9	U/
Vanadium (MG/KG)	31.3	U/	31.2	U/
Zinc (MG/KG)	6.3	U/	6.2	U/
Cyanide (MG/KG)	7.9	U/	7.8	U/
Total Solids (%)	31.7	/	32.	/

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ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SVOC
Generated by: CAW
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-060UP 07/24/91	
Phenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-Chloroethyl) ether (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Chlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,3-Dichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,4-Dichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzyl alcohol (UG/KG)	21000.	J/J	300000.	U/UJ
1,2-Dichlorobenzene (UG/KG)	12000.	J/J	300000.	U/UJ
2-Methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-Chloroisopropyl)ether (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
N-Nitroso-di-n-dipropylamine (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachloroethane (UG/KG)	100000.	U/UJ	300000.	U/UJ
Nitrobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Isophorone (UG/KG)	6000000.	E/J	4600000.	/J
2-Nitrophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dimethylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzoic acid (UG/KG)	500000.	U/UJ	1500000.	U/UJ
bis(2-Chloroethoxy)methane (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dichlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,2,4-Trichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Naphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chloroaniline (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorobutadiene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chloro-3-methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Methylnaphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorocyclopentadiene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4,6-Trichlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4,5-Trichlorophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
2-Chloronaphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Dimethylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
Acenaphthylene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,6-Dinitrotoluene (UG/KG)	100000.	U/UJ	300000.	U/UJ
3-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Acenaphthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dinitrophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
4-Nitrophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ

... with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SVOC

Parameter	WK-TP03-06 07/24/91		WK-TP03-0600P 07/24/91	
Dibenzofuran (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dinitrotoluene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Diethylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chlorophenyl-phenylether (UG/KG)	100000.	U/UJ	300000.	U/UJ
Fluorene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
4,6-Dinitro-2-methylphenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
N-nitrosodiphenylamine (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Bromophenyl-phenylether (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Pentachlorophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Phenanthrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Di-n-butylphthalate (UG/KG)	100000.	U/UJ	120000.	J/J
Fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Butylbenzylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
3,3'-Dichlorobenzidine (UG/KG)	200000.	U/UJ	600000.	U/UJ
Benzo(a)anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Chrysene (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-ethylhexyl)phthalate (UG/KG)	250000.	J/J	76000.	J/J
Di-n-octyl Phthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(b)fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(k)fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(a)pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Indeno(1,2,3-cd)pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Dibenz(a,h)anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(g,h,i)perylene (UG/KG)	100000.	U/UJ	300000.	U/UJ

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90		WK-SWTB01-01 11/20/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	9.	U/	9.	U/
Acetone (UG/L)	10.	U/UJ	10.	U/UJ	11.	B/UJ	10.	U/UJ
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: VOC
Generated by: CAW
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Chloromethane (UG/KG)	1600000.	U/	1600000.	U/
Bromomethane (UG/KG)	1600000.	U/	1600000.	U/
Vinyl chloride (UG/KG)	1600000.	U/	1600000.	U/
Chloroethane (UG/KG)	1600000.	U/	1600000.	U/
Methylene chloride (UG/KG)	780000.	U/	780000.	U/
Acetone (UG/KG)	17000000.	D/J	73000000.	E/J
Carbon disulfide (UG/KG)	780000.	U/	780000.	U/
1,1-Dichloroethene (UG/KG)	780000.	U/	780000.	U/
1,1-Dichloroethane (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloroethene (total) (UG/KG)	780000.	U/	780000.	U/
Chloroform (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloroethane (UG/KG)	780000.	U/	780000.	U/
2-Butanone (UG/KG)	1600000.	U/	1600000.	U/
1,1,1-Trichloroethane (UG/KG)	780000.	U/	780000.	U/
Carbon tetrachloride (UG/KG)	780000.	U/	780000.	U/
Vinyl acetate (UG/KG)	1600000.	U/	1600000.	U/
Bromodichloromethane (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloropropane (UG/KG)	780000.	U/	780000.	U/
cis-1,3-Dichloropropene (UG/KG)	780000.	U/	780000.	U/
Trichloroethene (UG/KG)	780000.	U/	780000.	U/
Dibromochloromethane (UG/KG)	780000.	U/	780000.	U/
1,1,2-Trichloroethane (UG/KG)	780000.	U/	780000.	U/
Benzene (UG/KG)	780000.	U/	780000.	U/
trans-1,3-Dichloropropene (UG/KG)	780000.	U/	780000.	U/
Bromoform (UG/KG)	780000.	U/	780000.	U/
4-Methyl-2-pentanone (UG/KG)	3800000.	D/J	15000000.	/J
2-Hexanone (UG/KG)	1600000.	U/	1600000.	U/
Tetrachloroethene (UG/KG)	780000.	U/	780000.	U/
1,1,2,2-Tetrachloroethane (UG/KG)	1600000.	U/	1600000.	U/
Toluene (UG/KG)	22000000.	D/J	87000000.	E/J
Chlorobenzene (UG/KG)	780000.	U/	780000.	U/
Ethylbenzene (UG/KG)	780000.	U/	340000.	J/J
Styrene (UG/KG)	780000.	U/	780000.	U/
Xylenes (total) (UG/KG)	310000.	DJ/J	1400000.	/J

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

TEST PITS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01 01 11/20/90		WK-SWIB01-01 11/20/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	9.	U/	9.	U/
Acetone (UG/L)	10.	U/UJ	10.	U/UJ	11.	B/UJ	10.	U/UJ
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: SVOC

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	24.	B/UJ	39.	B/UJ	5.	BJ/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Q[illegible]ier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: IND MIL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SW10-01 04/02/91		WK-SW10-91 04/02/91		WK-SW11-01 04/03/91	
Aluminum (UG/L)	50.	U/	50.	U/	76.	K/	83.5	K/	87.	K/
Antimony (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Arsenic (UG/L)	2.4	KNS/J	2.	UN/UJ	2.	U/	2.	U/	2.	U/
Barium (UG/L)	222.	/	195.	K/	48.5	K/	48.	K/	67.5	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	199000.	/	189000.	/	79000.	/	79600.	/	86700.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	14.	K/	12.	K/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	32200.	/	28000.	/	432.	/	396.	/	1190.	/
Lead (UG/L)	4.6	S*/J	5.3	S*/J	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	126000.	/	126000.	/	31600.	/	31000.	/	46300.	/
Manganese (UG/L)	615.	/	641.	/	54.5	/	52.	/	86.5	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	121.	/	141.	/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	16000.	/	15700.	/	1220.	K/	1220.	K/	10100.	/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	63400.	/	60400.	/	28900.	/	30200.	/	35100.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	264.	/	225.	/	10.	U/	10.	U/	181.	/
Cyanide (UG/L)	10.	U/	10.	U/						
Alkalinity, Total (MG/L)					234.	/	234.	/	368.	/
Chloride (MG/L)					70.	/	69.	/	67.	/
Nitrate+Nitrite Nitrogen (MG/L)					4.33	/	4.23	/	3.2	/
Nitrogen, Ammonia (MG/L)					0.21	/	0.24	/	1.51	/
Nitrogen, Total Kjeldahl (MG/L)					1.82	N/J	1.93	N/J	3.48	N/J
Phosphorus, Total (MG/L)					0.03	/	0.03	/	0.04	/
Sulfate (MG/L)					74.	/	67.	/	70.	/
Total Dissolved Solids (MG/L)					506.	/	478.	/	600.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Type: IND MTL

	WK-SW12-01 04/03/91		WK-SWFB01-01 11/20/90		WK-SWFB10-01 04/03/91	
(UG/L)	89.	K/	50.	U/	50.	U/
(UG/L)	50.	U/	50.	U/	50.	U/
(UG/L)	2.	U/	2.	UN/UJ	2.	U/
(UG/L)	73.5	K/	10.	U/	10.	U/
um (UG/L)	5.	U/	5.	U/	5.	U/
(UG/L)	5.	U/	5.	U/	5.	U/
um, total (UG/L)	99200.	/	1000.	U/	1000.	U/
(UG/L)	10.	U/	10.	U/	10.	U/
(UG/L)	10.	U/	10.	U/	10.	U/
(UG/L)	10.	U/	10.	U/	10.	U/
(UG/L)	986.	/	20.	U/	20.	U/
(UG/L)	3.	U/	3.	U*/UJ	3.	U/
(UG/L)	58100.	/	1000.	U/	1000.	U/
sium (UG/L)	64.	/	10.	U/	10.	U/
anese (UG/L)	0.2	U/	0.2	U/	0.2	U/
ury (UG/L)	20.	U/	20.	K/U	20.	U/
el (UG/L)	9920.	/	100.	U/	100.	U/
ssium (UG/L)	2.	US/	2.	U/	2.	U/
nium (UG/L)	10.	U/	10.	U/	10.	U/
ver (UG/L)	38500.	/	2000.	U/	2000.	U/
ium (UG/L)	3.	U/	3.	U/	3.	U/
ium (UG/L)	50.	U/	50.	U/	50.	U/
dium (UG/L)	90.	/	10	U/	10.	U/
nc (UG/L)					5.	U/
yanide (UG/L)	432.	/			1.	U/
lkalinity, Total (MG/L)	64.	/			0.02	U/
hloride (MG/L)	2.51	/			0.1	U/
itrate+Nitrite Nitrogen (MG/L)	1.6	/			0.13	N/J
Nitrogen, Ammonia (MG/L)	3.44	N/J			0.02	U/
Nitrogen, Total Kjeldahl (MG/L)	0.04	/			5.	U/
Phosphorus, Total (MG/L)	69.	/			20.	U/
Sulfate (MG/L)	652.	/				
Total Dissolved Solids (MG/L)						

...ation Qualifier) to the ri... of the value.

SURFACE WATER

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO

WK-SD07-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	1300.	AJ/
Aldol (UG/KG)	730.	AJ/
Aldol (UG/KG)	340.	AJ/
Aldol (UG/KG)	210.	AJ/
Aldol (UG/KG)	510.	AJ/
1-Decanol, 2-ethyl- (UG/KG)	430.	J/
17-Pentatriacontene (UG/KG)	730.	J/
Unknown hydrocarbon (UG/KG)	170.	J/
Unknown (UG/KG)	170.	J/
Unknown hydrocarbon (UG/KG)	390.	J/
Dodecane, 1-iodo- (UG/KG)	560.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	510.	J/
Unknown hydrocarbon (UG/KG)	210.	J/
Unknown hydrocarbon (UG/KG)	4300.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	300.	J/
Unknown (UG/KG)	1800.	J/

WK-SD08-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	14000.	AJ/
Heptadecane, 2,6-dimethyl- (UG/KG)	4500.	J/
Unknown hydrocarbon (UG/KG)	4500.	J/
Unknown (UG/KG)	5200.	J/
Unknown hydrocarbon (UG/KG)	6000.	J/
Heptadecane, 2,6-dimethyl- (UG/KG)	37000.	J/
Unknown hydrocarbon (UG/KG)	20000.	J/
Unknown hydrocarbon (UG/KG)	3000.	J/
Octacosane (UG/KG)	16000.	J/
Vitamin E acetate (VAN) (UG/KG)	19000.	J/
Unknown hydrocarbon (UG/KG)	13000.	J/
Unknown hydrocarbon (UG/KG)	9000.	J/
Unknown (UG/KG)	8200.	J/
Unknown (UG/KG)	58000.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO

WK-SD04-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	1300.	AJ/
Aldol (UG/KG)	2300.	AJ/
Aldol (UG/KG)	460.	AJ/
Heptadecane (UG/KG)	650.	J/
Sulfur + unknown (UG/KG)	10000.	J/
Unknown hydrocarbon (UG/KG)	330.	J/
Hexanedioic acid, mono(2-ethyl (UG/KG)	390.	J/
Dimethylheptadecane (UG/KG)	520.	J/
Unknown (UG/KG)	330.	J/
Unknown hydrocarbon (UG/KG)	2000.	J/
Unknown (UG/KG)	650.	J/
Unknown (UG/KG)	650.	J/
Unknown (UG/KG)	5500.	J/
Unknown hydrocarbon (UG/KG)	3700.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	910.	J/
Unknown (UG/KG)	3100.	J/
Unknown (UG/KG)	1200.	J/
Dimethylheptadecane (UG/KG)	850.	J/
Unknown (UG/KG)	1300.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	1000.	J/

WK-SD05-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	2200.	J/
Aldol (UG/KG)	1500.	AJ/
Aldol (UG/KG)	1400.	AJ/
Unknown (UG/KG)	2000.	J/
Unknown (UG/KG)	690.	J/
Unknown (UG/KG)	390.	J/
Unknown (UG/KG)	310.	J/
Unknown (UG/KG)	460.	J/
Dimethylheptadecane (UG/KG)	770.	J/

SUMMARY OF TENTATIVELY IDEN[illegible] COMPOUNDS
Woodstock Landfill
Woodstock, Illinc

Matrix: SO

WK-SD06-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LG/DVG
Aldol (UG/KG)	1200.	AJ/
Aldol (UG/KG)	1400.	AJ/
Aldol (UG/KG)	370.	AJ/
Fluorophenol (UG/KG)	600.	J/
Unknown (UG/KG)	370.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	1200.	J/
Unknown aldehyde (UG/KG)	370.	J/
Unknown hydrocarbon (UG/KG)	670.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	890.	J/
Unknown aldehyde (UG/KG)	3200.	J/
Unknown hydrocarbon (UG/KG)	1900.	J/
Unknown (UG/KG)	7400.	J/
Unknown (UG/KG)	520.	J/
Unknown aldehyde (UG/KG)	1700.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Unknown (UG/KG)	1900.	J/
Vitamin E acetate + unknown (UG/KG)	890.	J/
Unknown aldehyde (UG/KG)	820.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	1900.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW06D-01 11/02/90		WK-GWMW06S-01 11/02/90	
Phenol (UG/L)	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW04D-01 11/01/90		WK-GWMW04S-01 11/01/90		WK-GWMW05D-01 11/01/90		WK-GWMW05D-91 11/01/90		WK-GWMW05S 01 11/01/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02S-01 10/31/90		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03S-01 11/01/90	
Dibenzofuran (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	40.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWB801-01 11/02/90		WK-GWFB01-01 10/31/90		WK-GWFB02-01 11/02/90		WK-GWMW01D 31 10/31/90		WK GWMW01S-01 10/31/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Labor (Qualifier/Data Validation Qualifier) to (ight of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW06D-01 11/02/90		WK-GWMW06S-01 11/02/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW04D-01 11/01/90		WK-GWMW04S-01 11/01/90		WK-GWMW05D-01 11/01/90		WK-GWMW05D-91 11/01/90		WK-GWMW05S-01 11/01/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	5.	J/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Labo. Qualifier/Data Validation Qualifier) t(right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW
Generated BY: CAW
Date Issued: 10-MAY-91

WK-GWMW01S-01 10/31/90

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
ETHANE, 1,1'-OXYBIS (UG/L)	7.	J/

WK-GWMW01S-02 02/06/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/JN

WK-GWMW02S-01 10/31/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	32.	J/

WK-GWMW07-01 02/06/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/JN

WK-GWMW07-02 04/02/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	6.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW
Generated By: CAW
Date Issued: 01-OCT-91

WK-GWMW11-91 08/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	19.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND

Parameter	WK-SBMW04-13.5 08/10/90		WK-SBMW05-22 08/01/90		WK-SBMW06-08.5 07/31/90		WK-SBMW06-33.5 07/31/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	140.	/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	5.88	/	0.	U/	0.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SBMW01D-08.5 07/27/90		WK-SBMW01D-41 07/30/90		WK-SBMW02-43 08/03/90		WK-SBMW02-60 08/03/90		WK-SBMW03-06 08/06/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	0.	U/	3.95	/	0.	U/	0.	U/

DISQUALIFIED MONITORING WELL SAMPLES

NOTE FOR APPENDIX F-3a

A sampling error was made at four deep monitoring wells in the Phase I, Round 1 sampling (October 31 to November 2, 1991). The analytical results which were disqualified as a result of the sampling error are presented in this Appendix.

The initial analytical results (from October 31 to November 2, 1991 sampling) indicated that trichloroethylene (TCE) and Xylenes had been detected at or below detection limit in monitoring wells MW-1D, MW-2D, MW-5D, and MW-6D; total xylenes were also estimated at 2 ug/l at each of these wells. During data validation, it was discovered that trace levels of TCE were also found in the field blanks collected through the bladder pump which had been used to purge and sample these wells. The blanks indicated TCE levels of 18 ug/l and a xylene level of 2 ug/l. It was discovered that the pump used to purge these wells had previously been used at a site contaminated with TCE. These monitoring wells were re-sampled on December 12, 1990. The results of the resampling indicated n detection of either trichloroethylene or xylenes.

POSITIVE DETECT/USABLE ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOA
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWMW01D-BAD 10/31/90	WK-GWMW02D-BAD 10/31/90	WK-GWMW05D-9BAD 11/01/90	WK-GWMW05D-BAD 11/01/90	WK-GWMW06D-BAD 11/02/90
Chloromethane (UG/L)					
Bromomethane (UG/L)					
Vinyl chloride (UG/L)					
Chloroethane (UG/L)					
Methylene chloride (UG/L)					
Acetone (UG/L)					
Carbon disulfide (UG/L)					
1,1-Dichloroethene (UG/L)					
1,1-Dichloroethane (UG/L)					
1,2-Dichloroethene (total) (UG/L)					
Chloroform (UG/L)					
1,2-Dichloroethane (UG/L)					
2-Butanone (UG/L)					
1,1,1-Trichloroethane (UG/L)					
Carbon tetrachloride (UG/L)					
Vinyl acetate (UG/L)					
Bromodichloromethane (UG/L)					
1,2-Dichloropropane (UG/L)					
cis-1,3-Dichloropropene (UG/L)					
Trichloroethene (UG/L)					4. J/
Dibromochloromethane (UG/L)					
1,1,2-Trichloroethane (UG/L)					
Benzene (UG/L)					
trans-1,3-Dichloropropene (UG/L)					
Bromoform (UG/L)					
4-Methyl-2-pentanone (UG/L)					
2-Hexanone (UG/L)					
Tetrachloroethene (UG/L)					
1,1,2,2-Tetrachloroethane (UG/L)					
Toluene (UG/L)					
Chlorobenzene (UG/L)					
Ethylbenzene (UG/L)					
Styrene (UG/L)					
Xylenes (total) (UG/L)					2. J/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOA
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWMW01D-BAD 10/31/90		WK-GWMW02D-BAD 10/31/90		WK-GWMW05D-9BAD 11/01/90		WK-GWMW05D-BAD 11/01/90		WK-GWMW06D-BAD 11/02/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/UJ
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	/U	4.	J/U	4.	J/U	4.	J/U	4.	J/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/U	1.	J/U	2.	J/U	2.	J/U	2.	J/

(Data Validation Qualifier) to the right of the value.

PRIVATE WELLS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: MTL

Parameter	WK-PWFB01-01 07/24/90	
Aluminum (UG/L)	50.	U/
Antimony (UG/L)	5.	U/
Arsenic (UG/L)	2.	U/
Barium (UG/L)	10.	U/
Beryllium (UG/L)	5.	U/
Cadmium (UG/L)	0.2	U/
Calcium (UG/L)	1000.	U/
Chromium, total (UG/L)	0.51	K/U
Cobalt (UG/L)	10.	U/
Copper (UG/L)	10.	U/
Iron (UG/L)	20.	U/
Lead (UG/L)	3.	U/
Magnesium (UG/L)	1000.	U/
Manganese (UG/L)	10.	U/
Mercury (UG/L)	0.2	U/
Nickel (UG/L)	20.	U/
Potassium (UG/L)	100.	UW/UJ
Selenium (UG/L)	2.	U/
Silver (UG/L)	0.5	U/UJ
Sodium (UG/L)	1000.	U/
Thallium (UG/L)	3.	U/
Vanadium (UG/L)	50.	U/
Zinc (UG/L)	10.	U/
Cyanide (UG/L)	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-PW01-01 07/24/90		WK-PW02-01 07/24/90		WK-PW03-01 07/24/90		WK-PW04-01 07/24/90		WK-PW04-91 07/24/90	
Aluminum (UG/L)	50.	U/	50.	U/	52.	K/	51.	K/	50.	U/
Antimony (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Arsenic (UG/L)	2.3	K/	2.	US/	2.	U/	2.6	K/	2.	U/
Barium (UG/L)	63.	K/	10.	U/	98.	K/	134.	K/	137.	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Calcium (UG/L)	124000.	/	1300.	K/	82400.	/	109000.	/	109000.	/
Chromium, total (UG/L)	0.96	K/U	0.52	K/U	0.53	K/U	0.38	K/U	0.44	K/U
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	2430.	/	107.	/	996.	/	2500.	/	2680.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	68400.	/	1000.	U/	37200.	/	60000.	/	61200.	/
Manganese (UG/L)	119.	/	10.	U/	57.	/	34.	/	32.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.21	/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	1670.	KN/J	530.	KN/J	1190.	KN/J	1110.	KN/J	1020.	KN/J
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	U/
Silver (UG/L)	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ
Sodium (UG/L)	15200.	/	306000.	/	34000.	/	9500.	/	9100.	/
Thallium (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	KS/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	284.	/	50.	/	23.	/	132.	/	133.	/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: VOC

Parameter	WK-PWFB01-01 07/24/90		WK-PWTB01-01 07/24/90	
Chloromethane (UG/L)	2.	U/	2.	U/
Bromomethane (UG/L)	2.	U/	2.	U/
Vinyl chloride (UG/L)	2.	U/	2.	U/
Chloroethane (UG/L)	2.	U/	2.	U/
Methylene chloride (UG/L)	0.5	J/	1.	U/
Acetone (UG/L)	6.	B/U	5.	U/
Carbon disulfide (UG/L)	3.	U/	3.	U/
1,1-Dichloroethene (UG/L)	2.	U/	2.	U/
1,1-Dichloroethane (UG/L)	2.	U/	2.	U/
1,2-Dichloroethene (total) (UG/L)	2.	U/	2.	U/
Chloroform (UG/L)	4.	/	4.	/
1,2-Dichloroethane (UG/L)	2.	U/	2.	U/
2-Butanone (UG/L)	5.	U/R	5.	U/R
1,1,1-Trichloroethane (UG/L)	2.	U/	2.	U/
Carbon tetrachloride (UG/L)	2.	U/	2.	U/
Vinyl acetate (UG/L)	5.	U/	5.	U/
Bromodichloromethane (UG/L)	2.	U/	0.5	J/
1,2-Dichloropropane (UG/L)	2.	U/	2.	U/
cis-1,3-Dichloropropene (UG/L)	2.	U/	2.	U/
Trichloroethene (UG/L)	2.	U/	2.	U/
Dibromochloromethane (UG/L)	2.	U/	2.	U/
1,1,2-Trichloroethane (UG/L)	2.	U/	2.	U/
B[illegible]e (UG/L)	2.	U/	2.	U/
trans-1,3-Dichloropropene (UG/L)	1.	U/	1.	U/
Bromoform (UG/L)	2.	U/	2.	U/
4-Methyl-2-pentanone (UG/L)	2.	U/	2.	U/
2-Hexanone (UG/L)	5.	U/	5.	U/
Tetrachloroethene (UG/L)	2.	U/	2.	U/
1,1,2,2-Tetrachloroethane (UG/L)	2.	U/	2.	U/
Toluene (UG/L)	2.	U/	2.	U/
Chlorobenzene (UG/L)	2.	U/	2.	U/
Ethylbenzene (UG/L)	2.	U/	2.	U/
Styrene (UG/L)	1.	U/	1.	U/
Xylenes (total) (UG/L)	2.	U/	2.	U/
Acrolein (UG/L)	25.	U/R	25.	U/R
Acrylonitrile (UG/L)	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-PW01-01 07/24/90		WK-PW02-01 07/24/90		WK-PW03-01 07/24/90		WK-PW04-01 07/24/90		WK-PW04-91 07/24/90	
Chloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Bromomethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Vinyl chloride (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Methylene chloride (UG/L)	6.	/U	1.	/U	1.	/U	1.	/U	1.	U/
Acetone (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon disulfide (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
1,1-Dichloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1-Dichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloroethene (total) (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chloroform (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
2-Butanone (UG/L)	5.	U/R	5.	U/R	5.	U/	5.	U/R	5.	U/R
1,1,1-Trichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Carbon tetrachloride (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Vinyl acetate (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromodichloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloropropane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
cis-1,3-Dichloropropene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Trichloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Dibromochloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1,2-Trichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Benzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
trans-1,3-Dichloropropene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Bromoform (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
4-Methyl-2-pentanone (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
2-Hexanone (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Tetrachloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1,2,2-Tetrachloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Toluene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chlorobenzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Ethylbenzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Styrene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Xylenes (total) (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Acrolein (UG/L)	25.	U/R	25.	U/R	25.	U/	25.	U/R	25.	U/R
Acrylonitrile (UG/L)	25.	U/	25.	U/	25.	U/	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SEDIMENT

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO Type: SLIND MIL

Parameter	WK-SD05-01 09/06/90		WK SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90		WK-SD10-01 04/02/91	
Aluminum (MG/KG)	6270.	/	8850.	/	6210.	/	12500.	/	5560.	/
Antimony (MG/KG)	25.4	UN/UJ	24.4	UN/UJ	15.8	UN/UJ	56.5	UN/UJ	49.6	U/
Arsenic (MG/KG)	18.1	/	7.	/	2.3	K/	5.3	K/	11.1	K/
Barium (MG/KG)	283.	/	146.	/	46.8	K/	100.	K/	112.	K/
Beryllium (MG/KG)	2.5	U/	2.4	U/	1.6	U/	5.6	U/	5.	U/
Cadmium (MG/KG)	2.5	U/	2.4	U/	1.6	U/	5.6	U/	5.	U/
Calcium (MG/KG)	136000.	/	99800.	/	61400.	/	18500.	/	35100.	N/J
Chromium, total (MG/KG)	11.7	/	13.2	/	8.9	/	18.1	/	9.9	U/
Cobalt (MG/KG)	6.6	K/U	5.8	K/U	5.1	K/U	11.3	U/	9.9	U/
Copper (MG/KG)	61.	/	26.8	/	10.7	/	29.4	/	12.9	K/
Iron (MG/KG)	46300.	/	16700.	/	10600.	/	14600.	/	18200.	/
Lead (MG/KG)	46.8	S/	22.7	S/	11.3	S/	44.9	S/	72.8	S*/
Magnesium (MG/KG)	16700.	/	4270.	/	29000.	/	8570.	/	6880.	/
Manganese (MG/KG)	605.	/	558.	/	208.	/	147.	/	148.	/
Mercury (MG/KG)	0.1	U/	0.1	U/	0.06	U/	0.23	U/	0.28	U/
Nickel (MG/KG)	42.2	/	9.7	U/	6.3	U/	45.2	K/	19.8	U/
Potassium (MG/KG)	1380.	K/	1250.	K/	692.	K/	1610.	K/	784.	K/
Selenium (MG/KG)	1.	U/	0.98	US/	0.63	U/	2.3	U/	2.3	US/
Silver (MG/KG)	5.1	U/	4.9	U/	3.2	U/	11.3	U/	9.9	U/
Sodium (MG/KG)	1020.	U/	975.	U/	939.	K/	5490.	K/	2040.	K/
Thallium (MG/KG)	1.6	K/	1.5	U/	0.95	U/	3.4	U/	3.4	U/
Vanadium (MG/KG)	25.4	U/	26.8	/	23.4	/	56.5	U/	49.6	U/
Zinc (MG/KG)	432.	/	168.	/	42.7	/	150.	/	108.	/
Cyanide (MG/KG)	6.4	U/	6.1	U/	3.9	U/	14.1	U/		
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/		
Cation Exchange Capacity (MEQ/L)	5.08	/	11.5	/	5.11	/	12.7	/		
Total Solids (%)	39.3	/	41.	/	63.3	/	17.7	/	14.3	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO Type: SLIND MIL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Aluminum (MG/KG)	8870.	/	7470.	/	9630.	/	15600.	/	13800.	/
Antimony (MG/KG)	33.7	UN/UJ	34.	UN/UJ	33.3	UN/UJ	49.	UN/UJ	21.4	UN/UJ
Arsenic (MG/KG)	6.3	K/	7.5	/	12.7	/	24.	S/	9.7	/
Barium (MG/KG)	209.	/	223.	/	243.	/	316.	/	238.	/
Beryllium (MG/KG)	3.4	U/	3.4	U/	3.3	U/	4.9	U/	2.1	U/
Cadmium (MG/KG)	3.4	U/	3.4	U/	3.3	U/	4.9	U/	2.1	U/
Calcium (MG/KG)	33200.	/	36500.	/	43300.	/	112000.	/	66800.	/
Chromium, total (MG/KG)	15.5	/	14.3	/	28.	/	30.4	/	41.4	/
Cobalt (MG/KG)	6.7	U/	6.8	U/	7.3	K/U	10.8	K/U	9.4	K/U
Copper (MG/KG)	28.3	/	29.3	/	99.3	/	28.4	/	144.	/
Iron (MG/KG)	20800.	/	21300.	/	28000.	/	67000.	/	56300.	/
Lead (MG/KG)	44.9	/	50.2	/	109.	/	43.7	S/	30.5	S/
Magnesium (MG/KG)	4310.	/	4370.	/	6500.	/	14700.	/	13800.	/
Manganese (MG/KG)	357.	/	445.	/	531.	/	676.	/	747.	/
Mercury (MG/KG)	0.15	/	0.14	U/	0.15	/	0.2	U/	0.3	/
Nickel (MG/KG)	31.6	/	17.7	K/	107.	/	24.5	K/	274.	/
Potassium (MG/KG)	821.	K/	694.	K/	1110.	K/	4210.	K/	1600.	K/
Selenium (MG/KG)	2.4	K/	1.6	KS/	1.9	K/	2.9	K/	1.7	K/
Silver (MG/KG)	6.7	U/	6.8	U/	6.7	U/	49.	U/	4.3	U/
Sodium (MG/KG)	1350.	U/	1360.	U/	1330.	U/	1960.	U/	855.	U/
Thallium (MG/KG)	2.5	K/	2.	U/	2.	U/	3.7	KS/	2.1	K/
Vanadium (MG/KG)	34.3	/	34.	U/	33.3	U/	49.	U/	37.6	/
Zinc (MG/KG)	196.	/	212.	/	806.	/	175.	/	715.	/
Cyanide (MG/KG)	8.4	U/	8.5	U/	8.3	U/	12.2	U/	5.3	U/
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/	16000.	>/
Cation Exchange Capacity (MEQ/L)	16.1	/	16.3	/	19.4	/	7.86	/	5.4	/
Total Solids (%)	29.7	/	29.4	/	30.	/	20.4	/	46.8	/

Note: (1) Results are reported with qualifiers (Laborat..y Qualifier/Data Validation Qualifier) to (right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MTL

Parameter	WK-SD15-01 04/03/91		WK-SD16-01 04/03/91	
Aluminum (MG/KG)	12800.	/	3430.	/
Antimony (MG/KG)	42.	U/	41.7	U/
Arsenic (MG/KG)	9.3	/	12.5	/
Barium (MG/KG)	129.	K/	79.2	K/
Beryllium (MG/KG)	4.2	U/	4.2	U/
Cadmium (MG/KG)	4.2	U/	4.2	U/
Calcium (MG/KG)	65000.	N/J	23600.	N/J
Chromium, total (MG/KG)	17.6	/	8.3	U/
Cobalt (MG/KG)	11.7	K/	8.3	U/
Copper (MG/KG)	26.9	/	15.	K/
Iron (MG/KG)	22700.	/	16500.	/
Lead (MG/KG)	56.6	*/	73.	*/
Magnesium (MG/KG)	18500.	/	3160.	K/
Manganese (MG/KG)	571.	/	181.	/
Mercury (MG/KG)	0.2	U/	0.23	U/
Nickel (MG/KG)	16.8	K/	16.7	U/
Potassium (MG/KG)	2020.	K/	1510.	K/
Selenium (MG/KG)	1.7	US/	1.8	US/
Silver (MG/KG)	8.4	U/	8.3	U/
Sodium (MG/KG)	4440.	/	1670.	U/
Thallium (MG/KG)	2.6	U/	2.7	U/
Vanadium (MG/KG)	42.	U/	41.7	U/
Zinc (MG/KG)	153.	/	131.	/
Cyanide (MG/KG)				
Total Organic Carbon (MG/KG)				
Cation Exchange Capacity (MEQ/L)				
Total Solids (%)	19.7	/	17.3	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MIL

Parameter	WK-SD10 91 04/02/91		WK-SD11-01 04/03/91		WK-SD12-01 04/03/91		WK-SD13 01 04/03/91		WK-SD14 01 04/03/91	
Aluminum (MG/KG)	8390.	/	8850.	/	12300.	/	8400.	/	11600.	/
Antimony (MG/KG)	41.	U/	57.	U/	22.9	U/	50.7	U/	19.5	U/
Arsenic (MG/KG)	12.9	/	12.8	/	7.3	/	6.9	K/	5.5	/
Barium (MG/KG)	152.	K/	165.	K/	172.	/	97.3	K/	161.	/
Beryllium (MG/KG)	4.1	U/	5.7	U/	2.3	U/	5.1	U/	1.9	U/
Cadmium (MG/KG)	4.1	U/	5.7	U/	2.3	U/	5.1	U/	1.9	U/
Calcium (MG/KG)	38400.	N/J	54400.	N/J	29300.	N/J	22000.	N/J	11000.	N/J
Chromium, total (MG/KG)	8.6	/	13.2	/	18.2	/	10.1	U/	15.6	/
Cobalt (MG/KG)	8.2	U/	11.4	U/	6.9	K/	10.1	U/	7.	K/
Copper (MG/KG)	14.8	K/	31.9	/	17.8	/	12.2	K/	17.5	/
Iron (MG/KG)	25000.	/	34500.	/	29900.	/	16100.	/	15400.	/
Lead (MG/KG)	73.	*/	58.3	*/	18.7	*/	450.	*/	42.1	S*/
Magnesium (MG/KG)	8950.	/	10600.	/	6830.	/	3270.	K/	3630.	/
Manganese (MG/KG)	152.	/	270.	/	293.	/	238.	/	1260.	/
Mercury (MG/KG)	0.19	U/	0.29	U/	0.11	U/	0.27	U/	0.11	U/
Nickel (MG/KG)	16.4	U/	28.5	K/	16.9	K/	20.3	U/	16.8	/
Potassium (MG/KG)	1020.	K/	1630.	K/	1460.	K/	1050.	K/	1590.	K/
Selenium (MG/KG)	1.4	K/	2.3	KS/	1.6	K/	2.4	US/	0.96	K/
Silver (MG/KG)	8.2	U/	11.4	U/	4.6	U/	10.1	U/	3.9	U/
Sodium (MG/KG)	2000.	K/	2300.	K/	914.	U/	2030.	U/	779.	U/
Thallium (MG/KG)	2.1	U/	3.4	U/	1.2	US/	3.6	U/	1.1	U/
Vanadium (MG/KG)	41.	U/	57.	U/	22.9	U/	50.7	U/	26.1	/
Zinc (MG/KG)	140.	/	513.	/	87.8	/	53.7	/	93.9	/
Cyanide (MG/KG)										
Total Organic Carbon (MG/KG)										
Cation Exchange Capacity (MEQ/L)										
Total Solids (%)	21.4	/	13.9	/	34.9	/	14.6	/	35.4	/

Note: (1) Results are reported with qualifiers (Labo / Qualifier/Data Validation Qualifier) to (right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: VOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Chloromethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Bromomethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Vinyl chloride (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Chloroethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Methylene chloride (UG/KG)	28.	B/U	21.	B/U	17.	B/U	220.	B/U
Acetone (UG/KG)	62.	B/U	55.	B/U	32.	B/U	280.	B/U
Carbon disulfide (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1-Dichloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1-Dichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloroethene (total) (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Chloroform (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
2-Butanone (UG/KG)	28.	U/	23.	U/	13.	U/	39.	BJ/U
1,1,1-Trichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Carbon tetrachloride (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Vinyl acetate (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Bromodichloromethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloropropane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
cis-1,3-Dichloropropene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Trichloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Dibromochloromethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1,2-Trichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Benzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
trans-1,3-Dichloropropene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Bromoform (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
4-Methyl-2-pentanone (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
2-Hexanone (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Tetrachloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1,2,2-Tetrachloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Toluene (UG/KG)	3.	J/	3.	J/	7.	/	92.	/
Chlorobenzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Ethylbenzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Styrene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Xylenes (total) (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SB01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Chloromethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Bromomethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Vinyl chloride (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Chloroethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Methylene chloride (UG/KG)	47.	B/U	57.	B/U	64.	B/U	43.	B/U	57.	B/U
Acetone (UG/KG)	33.	U/	74.	B/U	140.	B/U	130.	B/U	87.	B/U
Carbon disulfide (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1-Dichloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1-Dichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloroethene (total) (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Chloroform (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
2-Butanone (UG/KG)	33.	U/	30.	U/	32.	U/	15.	J/	20.	U/
1,1,1-Trichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Carbon tetrachloride (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Vinyl acetate (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Bromodichloromethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloropropane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
cis-1,3-Dichloropropene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Trichloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Dibromochloromethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1,2-Trichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Benzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
trans-1,3-Dichloropropene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Bromoform (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
4-Methyl-2-pentanone (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
2-Hexanone (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Tetrachloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1,2,2-Tetrachloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Toluene (UG/KG)	16.5	U/	15.	U/	12.	J/	17.	J/	14.	/
Chlorobenzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Ethylbenzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Styrene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Xylenes (total) (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/

Note: All Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Phenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-Chloroethyl) ether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Chlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,3-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,4-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzyl Alcohol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,2-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachloroethane (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Nitrobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Isophorone (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Nitrophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dimethylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzoic Acid (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
bis(2-Chloroethoxy)methane (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dichlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,2,4-Trichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Naphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chloroaniline (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorobutadiene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chloro-3-methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Methylnaphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorocyclopentadiene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4,6-Trichlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4,5-Trichlorophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
2-Chloronaphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Dimethylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Acenaphthylene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,6-Dinitrotoluene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
3-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Acenaphthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dinitrophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
4-Nitrophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Phenol (UG/KG)	1089.	U/	1188.	U/	1100.	J/	1485.	U/	627.	U/
bis(2-Chloroethyl) ether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Chlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,3-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,4-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzyl Alcohol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,2-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	100.	J/
2-Methylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Methylphenol (UG/KG)	1089.	U/	1188.	U/	180.	J/	1485.	U/	627.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachloroethane (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Nitrobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Isophorone (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Nitrophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dimethylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzoic Acid (UG/KG)	5280.	U/	5760.	U/	190.	J/	7200.	U/	3040.	U/
bis(2-Chloroethoxy)methane (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dichlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,2,4-Trichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Naphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chloroaniline (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorobutadiene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chloro-3-methylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Methylnaphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorocyclopentadiene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4,6-Trichlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4,5-Trichlorophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
2-Chloronaphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Dimethylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Acenaphthylene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,6-Dinitrotoluene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
3-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Acenaphthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dinitrophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
4-Nitrophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Dibenzofuran (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dinit-otoluene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Diethylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chlorophenyl-phenylether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Fluorene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
N-nitrosodiphenylamine (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Bromophenyl-phenylether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Pentachlorophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Phenanthrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Di-n-butylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Butylbenzylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
3,3'-Dichlorobenzidine (UG/KG)	1794.	U/	1716.	U/	1014.	U/	17472.	U/
Benzo(a)anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Chrysene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	220.	J/	200.	J/	60.	J/	7392.	U/
Di-n-octyl Phthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(b)fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(k)fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(a)pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Dibenz(a,h)anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(g,h,i)perylene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04 01 09/06/90	
Dibenzofuran (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dinitrotoluene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Diethylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chlorophenyl-phenylether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Fluorene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
N-nitrosodiphenylamine (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Bromophenyl-phenylether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Pentachlorophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Phenanthrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Di-n-butylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Fluoranthene (UG/KG)	1089.	U/	1188.	U/	120.	J/	1485.	U/	627.	U/
Pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Butylbenzylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
3,3'-Dichlorobenzidine (UG/KG)	2574.	U/	2808.	U/	2597.4	U/	3510.	U/	1482.	U/
Benzo(a)anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Chrysene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	350.	J/	250.	J/	1200.	/	270.	J/	290.	J/
Di-n-octyl Phthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(b)fluoranthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(k)fluoranthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(a)pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Dibenz(a,h)anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(g,h,i)perylene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/

Note: (1) Results are reported with qualifiers (Labora (Qualifier/Data Validation Qualifier) to (ight of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: PPCB

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
alpha-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
beta-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
delta-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
gamma-BHC (Lindane) (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Heptachlor (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Aldrin (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Heptachlor epoxide (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Endosulfan I (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Dieldrin (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDE (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endrin (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endosulfan II (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDD (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endosulfan sulfate (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDT (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Methoxychlor (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Endrin ketone (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
alpha-Chlordane (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
gamma-Chlordane (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Toxaphene (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/
Aroclor-1016 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1221 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1232 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1242 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1248 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1254 (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/
Aroclor-1260 (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: PPCB
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SB01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
alpha-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
beta-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
delta-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
gamma-BHC (Lindane) (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Heptachlor (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Aldrin (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Heptachlor epoxide (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Endosulfan I (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Dieldrin (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDE (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endrin (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endosulfan II (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDD (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endosulfan sulfate (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDT (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Methoxychlor (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Endrin ketone (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
alpha-Chlordane (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
gamma-Chlordane (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Toxaphene (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/
Aroclor-1016 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1221 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1232 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1242 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1248 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1254 (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/
Aroclor-1260 (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO

WK-SD01-91 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	2900.	AJ/
Aldol (UG/KG)	2700.	AJ/
Unknown (UG/KG)	2800.	J/
Tribromophenol (UG/KG)	1300.	J/
1-Heptadecanol (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	4400.	J/
Unknown hydrocarbon (UG/KG)	2100.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	5900.	J/
Unknown hydrocarbon (UG/KG)	1300.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Iron, tricarbonyl(N-(phenyl- (UG/KG)	4100.	J/
Unknown hydrocarbon (UG/KG)	6500.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Unknown hydrocarbon (UG/KG)	2400.	J/
Pentacosane (UG/KG)	3800.	J/
Unknown hydrocarbon (UG/KG)	3600.	J/
Unknown hydrocarbon (UG/KG)	2200.	J/
Unknown hydrocarbon (UG/KG)	5700.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO
Generated By: CAW
Date Issued: 10-MAY-91

WK-SDO1-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	3800.	J/
Aldol (UG/KG)	2800.	AJ/
Aldol (UG/KG)	700.	AJ/
Aldol (UG/KG)	700.	AJ/
Unknown hydrocarbon (UG/KG)	2000.	J/
Unknown hydrocarbon (UG/KG)	930.	J/
9-Octadecene, (E)- (UG/KG)	2600.	J/
Unknown hydrocarbon (UG/KG)	460.	J/
Unknown hydrocarbon (UG/KG)	350.	J/
Unknown (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	2000.	J/
Heptadecane, 2,6-dimethyl- (UG/KG)	2600.	J/
9-Octadecene, (E)- (UG/KG)	7100.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Tetracontane, 3,5,24-trimethyl (UG/KG)	3000.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown (UG/KG)	1400.	J/
Unknown (UG/KG)	810.	J/
Unknown (UG/KG)	1000.	J/
Unknown (UG/KG)	1500.	J/
Unknown (UG/KG)	930.	J/
Unknown (UG/KG)	930.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO

WX-SD03-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	1300.	J/
Aldol (UG/KG)	6500.	AJ/
Aldol (UG/KG)	2500.	AJ/
Aldol (UG/KG)	3100.	AJ/
Unknown (UG/KG)	1500.	J/
Dimethylheptadecane (UG/KG)	890.	J/
Hexanedioic acid, mono(2-ethyl (UG/KG)	740.	J/
Dimethylheptadecane (UG/KG)	1200.	J/
Dimethylheptadecane (UG/KG)	1600.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	2700.	J/
Unknown (UG/KG)	1300.	J/
Unknown (UG/KG)	4500.	J/
Dimethylheptadecane (UG/KG)	4600.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	6400.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	2800.	J/
Octacosane (UG/KG)	1800.	J/
Unknown (UG/KG)	1500.	J/
Unknown (UG/KG)	2400.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SO

WK-SD02-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	1200.	J/
Aldol (UG/KG)	6100.	AJ/
Aldol (UG/KG)	4100.	AJ/
Aldol (UG/KG)	700.	AJ/
Unknown subst. hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Unknown hydrocarbon (UG/KG)	5100.	J/
Unknown hydrocarbon (UG/KG)	1000.	J/
Unknown hydrocarbon (UG/KG)	3600.	J/
Unknown (UG/KG)	930.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Unknown hydrocarbon (UG/KG)	1400.	J/
Pentacosane (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	2600.	J/
Unknown (UG/KG)	3000.	J/
Unknown hydrocarbon (UG/KG)	3500.	J/
Pentacosane (UG/KG)	6900.	J/
Unknown hydrocarbon (UG/KG)	12000.	J/
Pentacosane (UG/KG)	12000.	J/
Unknown (UG/KG)	5400.	J/
Unknown (UG/KG)	7700.	J/
Unknown (UG/KG)	13000.	J/